Revision

GYNA

2010

1

DUB
FIBROID
CR. ENDOMET
ENDOMETRIOSIS

Definition

It is bleeding occurring 1 year after the menopause

Etiology

- Atrophic endometritis……..the commonest
  - Postmenopausal atrophic vulvo-vaginitis
- Genital tract malignancy
  - The most serious but not the most common (risk is 10–20 %)
  - Endometrial carcinoma….cervical cancer…..others
  - Benign tumors → endometrial hyperplasia, fibroids, polyp
- Complications of HRT
- Prolapse
  - Trophic ulcers
  - Neglected retained pessary

Assessment

4 questions for postmenopausal bl.
1- Hot flashes and other symptoms for atrophy
2- metastatic symptoms for cancers
3- something protruded for prolapse
4- HRT

▸ History

- *Age*…… post-menopausal
- *Race*……endometrial cancer more common in white race
- *Present history*……..
  - ➟ Analysis of bleed ng ⇦ onset, duration, amount, ccc, ttt received
  - ➟ Exclusion of a pelvic pathology
    - Pain, swelling → tumor
    - Something protruding → prolapse
    - Pain, dysparuenia, discharge → atrophic changes
- *Obstetric history*……..
  - Low parity → cancer endometrium & ovary
  - High parity → cancer cervix
- *Past history*……
  - Hematologic diseases, hypertension
  - Hormone intake

- Examination
  - *General*
    - Anemia & its degree
    - General disease e.g. HTN, obesity, DM (cancer corpus triad)
    - Metastasis & jaundice
  - *Abdominal*
    - Pelviabdominal swelling (fibroid, ovarian tumor)
    - Pyometra due to obstruction
  - *Vaginal* → detect a local cause (uterus is small in endometrial cancer)
  - P/R is important in tumors

- Investigation
  - *Blood tests*
    - CBC, coagulation profile
    - Organ function test (etiology or preoperative preparation)
    - Tumor markers
  - *Scanning*
    - X-ray (chest, HSG)
    - U/S (abdominal, vaginal), CT, MRI
    - Transvaginal ultrasound has a cut of value of 4 mm
  - *Endoscopy* → Laparoscopy, hysteroscopy, colposcopy
  - *Biopsy*

Endometrial biopsy

a. **Fractional curettage** (best)
   - Curette the cervix first then the uterus
   - Fails to detect 10% of cases
   - Differentiate cervical from endometrial carcinoma (PAS)

b. **Jet irrigation suction biopsy**
   - Using plastic cannula → inject 1-2 ml of saline
   - Collect the washed out tissues & cells for pathology

c. **Aspiration cannula** → Pipelle
   - Done without anesthesia
   - Outpatient procedure
   - Satisfactory results with less liability for perforation

Hysteroscopy (very useful) direct inspection & biopsy

العلاج يعتمد على الـ staging

Staging of endometrial cancer (Staging Laparotomy by FIGO, 1988)

Stage I (limited to corpus)	A		limited to endometrium
	B		Invasion < ½ Myometrium
	C		Invasion > ½ Myometrium
Stage II (Extension to cx)		A	Endocervical glandular involvement only
		B	Cervical stromal invasion
Stage III	A		Serosal involvement ± positive peritoneal cytology ± adnexal involvement
	B		Vaginal involvement
	C		LN involvement
Stage IV		A	Bladder or rectum infiltration
		B	Distant organs

Treatment of cancer endometrium

↪ ***Stage I*** → ***TAH & BSO*** (the commonest)

* **Ovaries must be removed as**
  - . They may contain microscopic metastasis
  - . E' produced can stimulate growth of residual lesion
* **Postoperative radiotherapy in**
  - . The tumor infiltrates > ½ myometrium
  - . The tumor is grade II or III
  - . LN involvement
  - . Papillary, clear (serous) cell carcinoma

↪ ***Stage II*** → ***TAH & BSO*** **Followed by** ***Radiotherapy***

- This line of treatment gives same results as "Wertheim"
- But is preferred as the patient is → old ± obesity, DM, hypertensive

↪ ***Stage III*** → ***Radiotherapy alone***

- The uterine cavity & vaginal vault are packed with radium or caesium followed by external pelvic irradiation
- This may be followed By TAH & BSO if tumor becomes resectable

↪ ***Stage IV*** → ***Palliative*** (advanced, recurrent)

* **Palliative hormonal therapy**
  - 80% of endometrial adenocarcinomas are E dependent
  - Depoprovera 300 mg/d for 3 months
* **Palliative chemotherapy** → Paclitaxel, Carboplatinum
* **Palliative radiotherapy** → for recurrence or distant metastasis

❷ Perimenopausal bleeding

Definition

It is bleeding occurring around the menopausal age (before or less than 1 year of amenorrhea)

Etiology

- Dysfunctional uterine bleeding
- Incidence of tumors is increased (e.g. fibroid)
- Others
  - Endometrial hyperplasia
  - Cervical intraepithelial neoplasia
  - Endometriosis/adenomyosis
  - Uterine polypi
- General
  - Hypertension, DM
  - Coagulation defects

Assessment

History

- *Age*: peri-menopausal → consider DUB or fibroid
- *Marital status*……..complications of pregnancy
- *Present history*……..onset, duration, amount, ccc, associating symptoms e.g.:
  - Pain, bleeding, infertility → endometriosis
  - Something protruding → prolapse
  - Excessive discharge + pain → infection
- *Menstrual history*…..if irregular menstruation → consider DUB
- *Obstetric history*……recent abortion (2^{ry} hge), recent VM (choriocarcinoma)
- *Past history*……hypertension, endocrine disease, hormonal therapy

Examination

- *General*
  - Anemia & its degree
  - General disease e.g. hypertension, endocrinological disease
  - Metastasis & jaundice
- *Abdominal*
  - Pelviabdominal swelling (fibroid, ovarian tumor)
  - Pregnancy
- *Vaginal* → detect a local cause (…/… is important in tumors)

- Investigation
  - *Blood tests*
    - CBC, coagulation profile
    - Organ function test (etiology or preoperative preparation)
    - Hormonal assay (for DUB)
    - Tumor markers
  - *Scanning*
    - X-ray (chest, HSG)
    - U/S (abdominal, vaginal), CT, MRI
  - *Endoscopy* → Laparoscopy, hysteroscopy, colposcopy
  - *Biopsy* - Endometrial sampling
    - Cervical biopsy
    - Vaginal cytology

1. Dysfunctional (functional) bleeding

- Abnormal uterine bleeding in absence of obvious ORGANIC cause
- Due to hormonal disturbances (HPO axis) or local PG imbalance

A) Ovular (cyclic)

- Functional Polymenorrhea ⇨ cycles are very short (d.t. short follicular phase)
- Irregular ripening of endomet. (CLI, LPD) ⇨ premenstrual spotting
- Irregular shedding of endometrium ⇨ postmenstrual spotting
- Halban's disease (Persistent CL)

B) Anovular (acyclic) ➡ metropathia haemorrhagica

- Pathophysiology
  - Anovulation → persistence of follicles → periods of amenorrhea
  - Unopposed hyperestrogenemia → proliferation ± hyperplasia ± polypi
  - Temporary ↓ E level + sloughing of endometrium → breakthrough bleeding
- Treatment
  1- *General* ⇨ correct anemia, antiprostaglandins, haemostatics
  2- *Hormonal*
     - Progestins ⇨ provera 10 mg/d for 21
     - COC ⇨ once daily: 21 days → stop 1 wk → repeat for 3 cycles
     - Anti-estrogen ⇨ Danazol Dimetriose (gestrinone) GnRH analogues
  3- *Surgical*
     - D&C → diagnostic (ovular or not ~ tumor or not) & therapeutic...50%
     - Hysteroscopic endometrial ablation
     - Hysterectomy → if above methods failed or in old age

2. Fibroid uterus

- Clinical picture
  - * Symptoms
    - **Uterine bleeding** (the commonest) ⇨ anemia (easy fatigability)
    - **Vaginal discharge** ⇨ Leucorrhea (pelvic congestion) or offensive
    - **Swelling** ⇨ **(abdominal or vaginal)**
    - **Pain** . Congestive dysmenorrhea (pelvic congestion)
      . Acute abdomen in.....Torsion....Inflammation....Red degeneration
  - * Signs
    - **Pelviabdominal mass** which is usually firm, mobile, non tender
    - **Bimanual examination:**
      . Symmetrically or asymmetrically (knobby) enlarged uterus
      . Cervical fibroid → small knob (uterus) on top of a large swelling

- Treatment
  - * Polypectomy and D&C ⇨ for submucous fibroid polyp
  - * Myomectomy
  - * Hysterectomy
    - Old patient > 40 years, completed her family
    - Cervical fibroid or associated endometrial carcinoma

3. Cancer cervix | CIN

- **Symptom** ⇨ contact bleeding
- **Sign** ⇨ suspicious cervix
- **Investigations**
  1- Pap smear
  . By Ayre's wooden spatula
  . Stain by Papanicolaou stain
  2- Colposcopy
  . Shows abnormal epithelium
  . Shows abnormal vascular pattern (punctate or mosaic)
  . Paint with acetic acid: abnormal areas → aceto-white
  . Paint with Schiller or Lugol's iodine
  3- Biopsy
  . Colposcopic directed
  . Large loop excision of the TZ

- Treatment
  - Stage Ia1.....TAH
  - Stage Ia2.....extended hysterectomy
  - Stage Ib, 2a....Wertheime
  - After that.....radiotherapy

endometrial hyperplasia / polyps ⇨ ممكن أزود قطعة كمان على

6) Metrorrhagia سؤال السنة اللي فاتت

Introduction

- It means excessive *amount* or *duration* at time of menses
- Normal menses is ccc by:
  - . Rhythm ⇨ regular every 21–35 days
  - . Duration ⇨ average 3-5 days
  - . Amount ⇨ 50–80 cc: average 3 napkins /day

Etiology هو بيزود بين الدم وقت هالفنقية تبقرهفتوة metrorrhagia مش بيعمل General السبب menorrhagia بعمل

- Organic
  - Tumors of genital tract
    - . Malignancy (cancer endometrium, cervix, ovary)
    - . Benign (submucous ulcerated fibroid)
  - Infection of genital tract
    - . Severe vulvo-vaginitis or cervicitis
    - . Pelvic inflammatory disease
  - Contraception
    - . Irregular intake of hormonal therapy
    - . IUCD

- Functional (anovular) → irregular uterine bl- not related to cycles
  - Metropathia haemorrhagica (anovular bleeding) وأكيد الدكيل normal cycles ايه
  - Threshold bleeding

Diagnosis....exclude 1st organic causes by assessment

- History
  - Pain, bleeding, infertility → endometriosis
  - Something protruding → prolapse
  - Fever, pain , offensive discharge → PID
  - Menstrual history.....to see if cyclic or acyclic
  - Contraceptive history.....irregular COC intake, IUCD

- Examination
  - General
    - . Anemia & its degree
    - . Metastasis & jaundice
  - Abdominal
    - . Symmetrical or asymmetrical enlargement (fibroid)
    - . Unilateral/bilateral, solid /cystic, fixed/mobile (ovarian)
  - Vaginal →
    - . Suspicious irregular looking cervix

- Investigation
  - Blood tests
    - . CBC, coagulation profile
    - . Organ function test (etiology or preoperative preparation)
    - . Hormonal assay (for DUB)
  - Scanning
    - . X-ray (chest, HSG)
    - . U/S (abdominal, vaginal), CT, MRI
  - Endoscopy → Laparoscopy, hysteroscopy, colposcopy
  - Biopsy
    - . Cancer ~~ovary~~ endometrium
      - Endometrial sampling ($D_{\&}C$)
      - Hysteroscopy or Pipel
    - . Cancer cervix
      - Pap smear & colposcopy
      - Cervical biopsy
    - . Caner ovary
      - Tumor markers
      - Doppler ultrasound

(كلمة ورد غلطها) بمعنى

Treatment of the cause

- Cancer endometrium
  - Stage 1.....TAH + BSO
  - Stage 2.....surgery + radiotherapy
  - Stage 3.....radiotherapy (tele & brachy)

- Cancer cervix
  - Stage 1a1.....TAH
  - Stage 1a2.....extended hysterectomy
  - Stage 1b, 2a....Wertheime
  - After that.....radiotherapy

- Cancer ovary
  - Exploratory laparotomy
    - ↳ TAH+BSC, lymphadenectomy, omentectomy
  - Followed by chemotherapy
    - ↳ CAP....epithelial
    - ↳ BEP....germ cell

سؤال لوحده — **Metropathia haemorrhagica** is then diagnosed by exclusion if all above organic causes are confirmed negative

- Def

  Acyclic bleeding *resulting from* → periods of anovulation,
  occurring from → proliferative or hyperplastic endometrium,
  It may be *preceded by* → periods of amenorrhea

- Pathophysiology
  - Anovulation → persistence of follicles → E but no P (no CL)
    ↘ *short periods of amenorrhea*
  - Temporary ↓ E level + necrosis & sloughing of endometrium
    ↘ *breakthrough bleeding*

- C/P
  - Short period of amenorrhea followed by PPI bleeding
  - P/V → symmetrically enlarged uterus ± enlarged adenexae

- TTT

نقسمها حلوة

General

- Correct anemia (even blood transfusion may be required)
- Antiprostaglandins ✓✓ e.g. Mefenamic acid, naproxen, ibuprofen
- Antifibrinolytics e.g. tranexamic acid (cyklokapron)
- Haemostatics e.g. diosmin (daflon), ethamsylate (dicynone)

Hormonal

- Bleeding
  - ➟ Progestins
    - Provera 10 mg/d for 21
    - Levonorgestrel IUCD (Mirena)
  - ➟ COC
    - Once daily: 21 days → stop 1 wk → repeat
- If failed
  - ➟ Danazol or Dimetriose (gestrinone)
  - ➟ GnRH analogues
- If infertility.....induction of ovulation

Surgical

- D&C → diagnostic (ovular or not ~ tumor or not) & therapeutic...50%
- Hysteroscopic endometrial ablation (if available)
- Hysterectomy → failed all above measures to stop bleeding

Menorrhagia

Introduction

- It means excessive amount or duration at time of menses
- Normal menses is ccc by:
  - . Rhythm regular 21 – 35 days
  - . Duration average 3 – 5 days
  - . Amount 50 – 80 cc: average 3 napkins /day

Etiology

- **Local**
  - . Organic = causes of pelvic congestion
    - *Congenital* ⇨ uterus didelphys / bicornis
    - *Traumatic* ⇨ obstetric, surgical, direct……IUCD
    - *Inflammatory* ⇨ chronic PID
    - *Tumors* ⇨ cervix, uterus, ovary, endometriosis
    - *Displacements* ⇨ prolapse, RVF, chronic inversion of uterus
  - . Functional = irregular ripening or shedding
- **General**
  - . Increased bleeding tendency ⇨
    - Blood diseases affecting coagulation e.g. VWD, ITP
    - Hypertension, Congestive heart failure
  - . Organ failure ⇨ renal / liver
  - . Endocrine ⇨ adrenal / thyroid disorders, DM (vasculopathy)
  - . Drugs ⇨ antiplatelet, anticoagulants

Assessment

- **History**
  - *Age*…… ..malignancy is more in old age
  - *Present history*……exclusion of a pelvic pathology
  - *Contraceptive* ……presence of IUCD
  - *Past history*……hypertension, endocrine disease, easy bruises
- **Examination**
  - *General*……general disease e.g. HTN or presence of metastasis
  - *Abdominal*……pelviabdominal swelling (fibroid, ovarian tumor)
  - *Vaginal*……detect a local cause e.g. prolapse, polyp
- **Investigation**
  - *Blood tests*……CBC and coagulation profile
  - *Scanning*……U/S (abdominal, vaginal), CT, MRI
  - *Endoscopy*……Laparoscopy, hysteroscopy, colposcopy
  - *Biopsy*……Pap smear or D&C

Treatment

1- *General*

- Correct anemia (even blood transfusion may be required)
- Anti-PG ✓✓ e.g. Mefenamic acid, naproxen, ibuprofen
- Anti-fibrinolytics e.g. tranexamic acid (cyklokapron)
- Haemostatics e.g. diosmin (daflon), ethamsylate (dicynone)

2- *TTT of the cause*

- PID
  - ➟ Medica
    - Antibiotics combination
    - Glycerine icthyol suppository
  - ➟ Surgical drainage: if masses are found
- Endometriosis
  - ➟ Medica
    - Progestins or COC
    - Anti-PG
  - ➟ Surgical electro-fulgration : better laparoscopic
- Fibroid
  - ➟ Young
    - Small: medical ttt by progestins
    - Large: myomectomy
  - ➟ Old..... .....hysterectomy
- Prolapse
  - ➟ Uterine prolapse
    - Young: sling
    - Old: vaginal hysterectomy
  - ➟ Vaginal.....classical repair

3- *Hormonal therapy*

- If no cause is found
  - ➟ Progestins
    - Provera 10 mg/d for 21
    - Levonorgestrel IUCD (Mirena)
  - ➟ COC
    - Once daily: 21 days → stop 1 wk → repeat

4- *Surgical*

- D&C → sometimes therapeutic
- Hysteroscopic endometrial ablation (if available)
- Hysterectomy
  - Failed all above measures to stop bleeding
  - Associating pathology is found
  - Old age

يتذكر الصفحة الى بالطول

⑤ Discuss gestational trophoblastic diseases (GTD's)

Introduction

- The term GTD applies to tumors that arise in the fetal chorion during pregnancy. They includes both partial or complete molar pregnancy that may locally benign, invasive or metastasizing
- In 5-10% of patients these tumors persist after evacuation, however, persistent GTT may ensue after any gestational event like abortion or term pregnancy
- Persistent GTT or choriocarcinoma are unique of being diagnosed by HCG and the curability with chemotherapy

Definition of vesicular mole

- Benign tumor of trophoblast ccc by trophoblastic proliferation + hydropic degeneration of villi
- It is more common in far east (1/1000)

Types

Complete mole ⇨ fertilization of one ovum by [2 sperms or rarely 1 sperm that divides into 2 followed by disappearance of all maternal chromosomes (androgenesis). It contains vesicles only with no fetus. The usual karyotype is 46xx

Partial mole ⇨ A normal ovum fertilized by 2 sperms or 1 sperm with 46 chromosomes (unreduced genome). It contains both vesicles & fetus. The usual karyotype is triploid e.g. 69 xxy

Clinical presentation

Symptoms

- *Amenorrhea* + sympt. of early pregnancy
- *Uterine bleeding* (irregular)
- *Pain* (dull aching or colicky or sharp)

Signs

- *General* ⇨ ill, anemic / shocked
  ⇨ signs of complications: PIH, hyperemesis gravidarum, thyrotoxicosis, pulmonary embolism
- *Abdominal*
  - Uterus > period of amenorrhea
  - Uterus doughy in consistency (vesicles with no fetal parts)
  - No fetal parts or FHS
  - Bilateral enlarged ovarian swellings
- *Vaginal* ⇨ passage of vesicles is *diagnostic* (rare)

Investigations

- **Ultrasound** → snow storm appearance
- **β-HCG** → +ve in high dilutions > 100.000 (also for follow up)
- **Chest X-ray** → for metastasis

Treatment

1] Suction evacuation by a wide bore cannula

± curettage to ensure complete evacuation

± ecbolics to ⇩ hge

2] Hysterectomy

- In old patients (> 40 years) who have completed their families
- Theca lutein cysts are not removed surgically except if complication occur (e.g. torsion or rupture)

3] Follow up by

- β-subunit of HCG
  - Every week → till –ve for **3** successive times (<5 mIU /ml)
  - Usually becomes –ve within **2–3** months
  - Every month → for **1–2** year/s
- **Pregnancy is avoided for 1–2 year/s:**
- **Criteria of possible development of choriocarcinoma**
  - β-hCG levels are rising, remains plateau or returning +ve
  - Persistent or recurrent uterine bleeding
  - Biopsy → diagnostic of choriocarcioma

Types of choriocarcinoma

1- Gestational after . **Vesicular mole** → 50%
. **Abortion, ectopic** → 25%
. **Delivery** → 25%

2- Non-gestational ⇔ ovarian

Diagnosis

❶ History……of recent termination of VM or pregnancy

❷ Symptoms
- *Bleeding* (irregular / persistent for wks / months from TOP)
- *Swelling* → abdominal, vaginal, vulval
- Acute abdominal *pain* (uterine perforation or torsion of TL cyst)
- *Metastasis*→ lung, CNS, liver

❸ Signs
- *General* → cachexia, metastasis
- *Pelvic* → uterus, ovaries → ± enlarged

Investigations

- **D&C** → must be done for every patient with bleeding after recent TOP → sheets of malignant trophoblastic cells with extensive areas of hge & necrosis but with no chorionic villi
- **β-HCG** → diagnostic……prognostic……follow up ttt
- **For extent & spread** → chest x-ray, CT, MRI

Staging

I (a,b,c)	II (a,b,c)	III (a,b,c)	IV (a,b,c)
Uterus	Pelvis	Lung	Other metastasis

و اشهرهم brain

- A → no risk factors
- B → 1 risk factor
- C → 2 risk factors

Risk factors:-

. β-HCG > 100.000 mIU/ml

. Duration of the disease > 6 m after preg.

يا قلبك الأسود

Treatment

1. Chemotherapy (mainly) ✓✓

** Classified into

➥ The high risk group > 8 (poor prognosis) ➠ 70 % 5-YSR
- Use combination chemotherapy, either:
  - MAC (Methotrexate, Actinomycin-D, Cyclophosphamide)
  - EMA-CO (Etoposide,---,---,---, Oncovin)
- Chemotherapy is given for as much as body tolerates toxicity till 3 –ve β-HCG is achieved → repeat for 3 more courses

➥ The low risk group < 4 (Good prognosis) ➠ 97 % 5-YSR
- Use single agent chemotherapy
  - Methotrexate or Actinomycin-D
- Till β-HCG is –ve then repeat for one more course

** Follow up for 2 years by monthly β-HCG

2. Hysterectomy if

- Chemotherapy intolerance (to ↓ its dose, time, side effects)
- Complications (severe bleeding, internal hge, ruptured TL cysts)
- Completed her family

- It is done during chemotherapy to ↓ dissemination of tumor emboli
- Ovaries can be left in young age (ovarian metastasis are rare)

SHEET FOR ABNORMAL GENITAL BLEEDING

❖ Personal

➥ Age

Peri-menopausal bleeding	Post-menopausal bleeding	Determines type of surgery
1- Dysfunctional uterine bleeding	1- Malignancy	* Old age → consider radical ttt
2- ↑ % of tumors esp. fibroid	2-Atrophic endometritis	* Younger age → more conservative
	3- Comp. of HRT use	
	4- Prolapse (ulcers)	

➥ Marital status..... complications of pregnancy
➥ Parity .....determines the type of surgery
➥ Occupation..... Stress → pelvic congestion, irregular menstruation
. Radiation → malignancy

❖ C/O .....irregular vaginal bleeding for ..... duration

❖ Present history

➥ The bleeding ❶

- The patient started to complain .....months / years ago by repeated attacks of vaginal bleeding (**onset**)
- In the form of (**analysis**)
  - *Menorrhagia* (as each attack lasted for 6 days in which the patient was changing more than 6 napkins / day)
  - *Metrorrhagia* (as bleeding was recurring every 15 days with no regular cycles)
  - There was no *contact bleeding* (very important)
- Attacks were increasing in severity (**course**) as there were excessive blood clots & the patient started to complain form dyspnea, easy fatigability (**effect**)

➥ Association of symptoms suggestive of a genital etiology

- The patient started to experience lower abdominal **pain** ❷ more on the right side, in the form of heaviness, radiating to the back & relieved by oral analgesics
- 2 months ago, the patient noticed whitish vaginal ❸ **discharge**, not associated with itching & relieved by local vaginal suppositories
- The patient didn't notice any associating **swellings** ❹ whether abdominal or any swelling protruding from vagina
- There were no associated dysuria, frequency (**urinary**), dyschazia or constipation (**rectal**)

لو العيانات بتشتكى من كذا حاجة احتار ال ..اط منهم ولا الأمره اللي عرف اعمله analysis كويس

➥ The patient sought medical advice
- Where she received medications in the form of **tablets**, however bleeding was relieved only for 2 months
- Ultrasound was done which was normal & the patient was advised to perform a **D&C** that revealed normal results
- However, bleeding recurred 3 months ago for which the patient took some **hormonal** ttt in the form of tab. for 21 days
- The last attack was 5 days ago, the patient was transferred to our hospital, in which the patient received 2 units of **blood**
- Ultrasound, vaginal smear, blood analysis was withdrawn which revealed normal results & the patient is prepared to perform **hysterectomy** this week

سؤال: How to manage acute bl.

leading questions

➥ There were no symptoms suggestive of general etiology
- *Coagulopathy* (purpura, bleeding from other orifices, prolonged bleeding after minor trauma)
- *Drug intake*…………anticoagulants, steroid hormones
- *Hypertension*…. …..headache, blurring of vision
- *Endocrinological diseases* (thyroid, adrenal)……..
- *Organ failure* (liver, renal)…………………………

➥ Esp if there is a swelling in the story……there were no symptoms suggestive of other causes of swelling such as
- *Ovarian tumors*………dyspepsia, distension, virilization
- *Tuberculosis* ………..night fever, swelling, loss of weight
- *GIT swellings*… …….change in bowel habits as melena, ascites

DDS ← لتورم

➥ Esp. if the patient is old…….there were no symptoms suggestive of metastasis such as
- *Rapid weight loss*, bone aches or hemoptysis
- *Yellowish sclera* (porta hepatis LN), neck swelling (Wirchow LN)

❖ Menstrual history…..if irregular menstruation → consider DUB

❖ Past history
- Medical → hypertension, endocrine disease, DM
- Surgical → previous D&C
- Drugs → hormonal therapy

❖ Diagnosis…….name, age, parity, peri (post) menopausal bleeding for invest.

Samia Gamal Fareed, 33 years, P1, irregular vaginal bleeding, mostly fibroid uterus for further evaluation

Complaint: irregular vaginal bleeding for 4 months duration

Menstrual history:

- The age of menarche was 13 years
- Cycles used to be regular, occurring every 28 days, lasting for 5 days of average amount neither associated with pain nor discharge.
- L.M.P.: unknown (*continuous bleeding*)

History of present illness:

- The condition started 4 months ago by a heavy menses (*menorrhagia*) leading to use of more than six napkins daily which were totally soaked.....onset. Bleeding ❶ was dark in color & associated with some blood clots (*a sign of severity*). The following months showed irregular attacks of vaginal bleeding occurring every 15 days each lasting for a week (*meno- metro- rrhagia*).....course
- She sought medical advice & she was given some form of oral tablets (*haemostatic*) but the condition was not relieved.....ttt received
- Bleeding attacks continued & the patient complained sometimes dyspnea & easy fatigability....effect.....but there were no fainting attacks or bleeding from other body orifices. Bleeding was not related to intercourse (*no contact bleeding....mostly no cancer cx*)
- There was associating lower abdominal dull aching pain ❷ which was relived by some oral analgesics. The last few weeks, she also started to complain from frequency of micturition (*pressure manifestation*) but there was no dysuria or loin pain & fever (*to exclude UTI*)
- There was no history of abdominal enlargement ❸, any other body swellings or any abnormal vaginal discharge ❹
- *A stumba*
  - There were no symptoms suggestive of ***general etiology***.....
  - There were no symptoms suggestive of ***other swelling***.....
  - There were no symptoms suggestive of ***metastasis***.....
- *The story*
  - The patient had done a pelvic U/S that showed enlargement of uterus mostly due to fibroid (*according to the patient's words*) or as seen in the report of the patient
  - The last week, she experienced a heavy attack of bleeding upon which the patient was transmitted to our hospital. She is prepared now to perform myomectomy on next Monday (*after elevating her hemoglobin*) by giving her 2 units of blood

Oral Questions

- **What is your diagnosis?** *Samia Gamal Fareed*, 33 years, P_1, irregular vaginal bleeding, mostly fibroid uterus for further evaluation

- **What are the clues for your diagnosis?**
  - *History* ⇨ . bleeding & pain
    . Hyperestrogenia (low parity, long period of infert.)
  - *Investigation* ⇨ U/S

- **What is the commonest symptom of fibroid?** asymptomatic

- **Could amenorrhea be a symptom?** No; except if she became pregnant

- **If this patient is pregnant, would you operate upon?** Never; except:-
  - *Acute abdomen* ⇨ red degeneration, torsion, infection
  - *Internal hemorrhage* ⇨ rupture

- **What is the character of fibroid clinically?** firm, mobile, non-tender

- **When to find a soft fibroid?** pregnant, degenerated, malignant

- **How could you differentiate by history from**
  - *Ovarian swelling* (3) ⇨ distension, dyspepsia, discomfort
  - *Tubo-ovarian complex* (3) ⇨ fever, lower abd. pain, discharge
  - *Endometriomas* (3) ⇨ infertility, pain, bleeding

- **What is the most important preoperative invest.?** Hb%, IVP and HSG

- **What you will do for this patient?** Myomectomy. **Why?**
  - The patient below 40 years.
  - She had 1 boy and wants to presume fertility.
  - No indication for hysterectomy

- **How to avoid bleeding?** pre-operative (3)....intra-operative (3)

- **Why some prefer to add $D_{\&}C$?**
  - *Remove hyperplastic endomet.* ⇨ avoid recurrence of symptoms
  - *Histopathology* ⇨ exclude associated endomet hyperplasia or cr.

- **What do you expect about her future fertility?** May be affected, adhesions are expected, ∴ HSG may be done later on

العدد 3 مختلف

Khadra Mohamed Khedr, 49 years P7, Peri-menopausal bleeding, multiple uterine myomata for investigation

Complaint: recurrent vaginal bleeding for the last 2 years

Menstrual history:

- She doesn't remember her menarche, cycles were regular cycles, D/C: 5/30 (???)
- L.M.P: menopause for four years ✓

Obstetrics history: P_{7+0} (3 living)

- All deliveries were at home, spontaneous and did not followed by any postpartum complication.
- She has only three living males

Past, Family, Contraceptive history

History of the present illness:

- The condition started 2 years ago when the patient experienced repeated attacks of vaginal **bleeding ❶**, each lasting for few days.
- She started to change 5 pads daily (in contrast to her usual 3 pads), blood was dark red & associated with many blood clots. She didn't experience any fainting attacks (*effect*) & there were no bleeding from any other body orifices (*association*). Also, bleeding was not related to intercourse (*no contact bleeding....no cancer cervix*)
- There was associating lower abdominal **pain ❷**, colicky in nature (*trial to expel the fibroids*) radiating to the back for which the patient took oral analgesics to relief. However, there was no associating abnormal vaginal **discharge ❸**
- *A stumba*
  - There were no symptoms suggestive of ***general etiology***.....
  - There were no symptoms suggestive of ***other swelling*** .....
  - There were no symptoms suggestive of ***metastasis***.....
- *The story*
  - Few months ago, the patient noticed gradual enlargement of her lower abdomen; which was associated with sensation of pelvic heaviness & lower abdominal dragging pain. There were no similar **swellings ❹** in her abdomen or her body
  - Two months ago, she noticed much increase of the abdominal contour for which the patient sought medical advice, and multiple uterine fibroids were discovered by U/S. The patient was given some injections to relieve bleeding after which she was referred to our hospital
- There were no associating urinary or rectal symptoms

Oral Questions

- What you will do for this patient? TAH & BSO
- What is the possibility to have malignancy? very small: 0.5%
- Would you remove or conserve on the ovaries? after 45 years; it is better to remove (no need + % of ovarian malignancy↑)
- What are the other indications for hysterectomy?
  - *After myomectomy*: if there is bleeding, recurrence, mutilating
  - *Associated endometrial cancer / leiomyosarcoma*
  - *Cervical / broad ligamentary fibroid*
- What are the alternatives: if the patient is not fit for surgery?
  - *Myolysis* (thermal or laser)
  - *Bilateral uterine artery embolization*
- On examination, fibroid produces symmetrical or asymmetrical swelling? It could produce both; according to growth
- How to differentiate between fibroid & ovarian swelling during examination? Fibroid moves with the movement of the cervix. Others are difficult as both ovarian & fibroid swellings may have or have not:
  - Lower margin
  - Mobility, tenderness
  - Central or lateral

  Fibroid < mobile, painless — ovary < معلقة ممكنة
- Could fibroid enlarge the cervix? Barrel shaped cx. What are the other causes?
  - Cancer cervix
  - Chronic hypertrophic cervicitis
  - Products of conception (ex abortion or ectopic)
- What are the other causes of pelviabdominal swelling?
  - *Uterine* ⇨ pregnancy, fibroid, hemato– or pyo– metra
  - *Ovarian* ⇨ neoplastic or non-neoplastic
  - *Broad ligament* ⇨ cyst, fibroid, hematoma, abscess
  - *Tubal* ⇨ hematosalpinx, hydrosalpinx, pyosalpinx
  - *Vaginal* ⇨ hematocolpos
  - *Douglas pouch* ⇨ pelvic haematocoele, pelvic abscess
  - *Others* ⇨ retroperitoneal mass / fecal mass / flatulence
- What are the causes of pelvi-abdominal selling + bleeding?
  - *Complications of pregnancy*
  - *Uterine tumors* ⇨ fibroid or sarcoma
  - *Inflammatory* ⇨ large tubo-ovarian complex
  - *Ovarian tumors if* ⇨ functioning, pelvic congestion, metastasis to ut.

Mena Waheed Shalaby, 42 years, P4+4, peri-menopausal
Bleeding mostly dysfunctional uterine bleeding

Complaint: abnormal vaginal bleeding of 3 years duration

Menstrual history:

- Menarche was at the age of 14 years.
- Cycles were regular, occur every 30 days and last for 3 days.
- L.M.P.: Last 3 months were irregular (menorrhagia)

Obstetric history: P_{4+4}

- All deliveries were normal vaginal deliveries at home, 4 living children.
- Last delivery 7 years ago.
- No post partum nor puerperal complications

Contraceptive history:

- The last method used IUD for 1.5 years
- The cause of removal is the irregular bleeding

Present history:

➥ *The Bleeding*

- The patient started to complain 3 years ago when menses started to become irregular (**onset**). In the beginning, (**analysis**) attacks occurred in the form of *menorrhagia* (as each attack lasted for 6 days in which the patient was changing more than 6 napkins /d), then the patient started to suffer from *metrorrhagia* (as bleeding was recurring every 15 days with no regular cycles)
- However, there was no contact bleeding
- Attacks were increasing in severity (**course**) as there were excessive blood clots & the patient started to C/O form dyspnea, easy fatigability

➥ *Association of symptoms suggestive of a local disease*

- There was no associated any type of **pain** or **discharge** or **swelling**

➥ *The patient sought medical advice*

- Where she received medications in the form of **tablets**, however bleeding was relieved only for 2 months. U/S was done & proved normal and the patient was advised to perform a **D&C**
- However, bleeding recurred 6 months ago for which the patient took some **hormonal** treatment in the form of tablets for 21 days. However, the conditioned recurred when the patient stops the medication.
- The patient was referred to our hospital to be prepared for hysterectomy.

➥ *A stumba*

- There were no symptoms suggestive of *general etiology*.....
- There were no symptoms suggestive of *other swelling* .....
- There were no symptoms suggestive of *metastasis*.....
- There were no associated **urinary**, or **rectal**.....symptoms

Oral questions

- **What are the clues for your diagnosis (DUB) ?**
  - *The commonest cause of bleeding* at that age is ⇨ DUB
  - *History* ⇨ no swelling, no pain
  - *U/S done was* ⇨ free
  - *TIT received was* ⇨ hormonal drugs

- **Are these data conclusive to diagnose DUB?**

  NO, diagnosis of DUB is reached through gradual excluding all other causes organic causes whether general or local. The most serious of which is malignancy. This exclusion is done through meticulous:
  - *History taking e.g.*
    - . Blood coagulation defects or use of anticoagulants
    - . Symptoms suggestive of hypertension, DM
  - *Examination*
    - . General……..cachexia……malignancy
    - . Abdominal…….swelling……fibroid or ovary
    - . Local…… ..suspicious……cancer cervix
  - *Investigations* ⇨ *most important is to exclude malignancy*
    - . Endometrial cancer……TVUS, confirm by D&C
    - . Cancer ovary……Doppler, confirm by laparotomy
    - . Cancer cervix ……Pap smear, confirm by a cx biopsy

- **What were the hormonal drugs received by the patient?**
  - *Progestins* ⇨ provera 10 mg/d for 21
  - *COC* ⇨ once daily: 21 days → stop 1 wk → repeat
  - *Also* ⇨ danazol or dimetriose or GnRH analogues

- **What will be done for this patient?** TAH

- **Will the ovaries be removed?** no, she is < 45 yrs

- **What is the alternative if not fit for surgery?** hysteroscopic endometrial ablation (thermal, cryo, laser, resection)

- **What are the other tumors causing of perimenopausal bleeding?** fibroid, polyps, CIN, adenomyosis, endometrial hyperplasia, ovarian neoplasms

- **What are the types of endometrial hyperplasia?**
  - *Simple hyperplasia* ⇨ cystic glandular hyperplasia
  - *Complex hyperplasia* ⇨ adenomatous hyperplasia
  - *Atypical hyperplasia* ⇨ any type + atypia

Case I (slide)

A young newly married lady, 27 years old consulted you on account of heavy periods, which extend over 6-8 days. Bleeding was also associated with severe pelvic pain characteristically starting few days before menses. She gave a past history of a laparotomy ten years earlier to remove an ovarian cyst chocolate cyst.

On examination: the general condition was normal, but on pelvic examination, the uterus was fixed in an RVF position and there was a tender fixed left adnexal mass 4x6 cm which was ill-defined

- **What is the most probable diagnosis? Why? How to confirm?**
- **Laparoscopy was done for this lady. All about this lesion are true except**

1- She (star) is likely to have the following complaints except

a- Dyspareunia
b- Painful defecation
c- Mucopurulent vaginal discharge
d- Severe dysmenorrhea
e- Infertility

2- The etiology of such condition doesn't include

a- Transformation of the ceolomic epith
b- Direct invasion of the uterine serosa into the coelomic cavity
c- Retrograde menstrual flow
d- Retrograde lymphatic spread
e- Retrograde vascular spread

3- Which physical sign is not consistent with that diagnosis:

a- Fixed retroversion of the uterus.
b- Tender pelvic masses
c- Adnexal enlargement.
d- Cul-de-sac nodules.
e- Omental nodules.

- **What is the best management for this lady**
- **What are other causes of adnexal mass & fixed RVF?**
  - PID
  - Ovarian cancer
  - Tuberculosis with encysted adhesions

  } causes of frozen pelvis
- **What are other causes of pelvi-abd swelling & bleeding ?**
  - Complications of pregnancy
  - *Uterine* tumors → fibroid or sarcoma
  - *Cervical* tumors if → pyometra
  - *Tubal comp.* → large tubo-ovarian complex
  - *Ovarian tumors* if . Functioning . Pelvic congestion. 2ries to uterus

Case 2 (slide)

A 67 year old who has been menopausal for the past 15 years has come to your office complaining of blood staining of the underwear. On examining her locally, you find that the uterus is atrophic and no masses in the Douglas pouch could be felt. You decide to do a D&C and a large amount of tissue is obtained which were sent for histopathological examination

- **What further points in the history could be relevant**
  - Ask for risk factors: – Race & class
    - Menstrual characters
    - Source of estrogen
    - Cancer corpus triad (obese, DM, HTN)
- **What is the diagnostic procedure more accurate than D&C** Hystroscope
- **What is the diagnostic procedure that could be done in your office** pipel
- **What would be the correct treatment in this case** TAH+BSO + selective lymphad

1- All the following regarding such condition are true except

a- 80% presents as postmenopausal bleeding and 5%. perimenopausal bl
b- May include areas of benign squamous metaplasia
c- Commonly discovered as stage Ia1
d- Spreads early to internal iliac LN × Cancer Cx
e- May occur due to prolonged use of tamoxifen >5yrs

2- As regard endometrial cr. with metastasis to the right ovary (Tru-Exc):

a- Patient is stage III a
b- There is long history of COC ← Cancer ovary, Benign breast lesions, endometrial carcinoma, ED
c- Accurate staging is done only upon surgery
d- Hysterectomy may be assisted by laparoscopy LAVH
e- Left ovary will be also removed

3- The following statements about cr endometrium are correct except

a- Involvement of the ovary puts the patient in stage III disease IIa
b- Myometrial invasion >50% puts the patient in stage II disease × cervical
c- Mostly is treated by TAH and BSO
d- Postoperative radiotherapy is rarely required after stage Ia1
e- Five year survival rate is > 90% in stage I

4- All the following may cause postmenopausal bleeding except

a- Atrophic endometrium
b- Fibroids
c- Cancer cervix
d- Choriocarcinoma
e- Prolapse
f- Hypertension

Case 3

A 72 year old lady presents with postmenopausal bleeding / spotting lasting for the past 3 months. She also complains of vaginal bleeding & itching. She had a hysterectomy for a benign ovarian condition 20 years ago. Clinical examination is normal apart from vaginal dryness

- **What is your possible diagnosis & TTT** atrophic vulvovaginitis
  1- reassurance 3- Local premarin cr.
  2- vaginal cytology and histopathology

Case 4 (slide)

A 48 year old woman (para3) represented to the clinic with menorrhagia for one year. Pelvic U/S showed 2 interstial myomas 3 cm and 2 cm in diameter. Blood tests showed Hb: 9.3 and serum FSH 20 mIU/ml

- **What is the most accepted line of management here**
- **Justify your answer**

1- All the following about uterine fibroids are true except:

a- They are estrogen dependent.
b- Asymptomatic cases are common.
c- Completely benign and sarcomatous changes never develop.
d- Shrink in size in response to treatment with LHRH agonists.
e- May be managed conservatively.

2- Medical treatment of fibroid might include all the following except:

a- Large doses of progesterone.
b- Tamoxifen.
c- Danazol.
d- LH-RH analogues.
e- Recombinant FSH.

3- Which is the incorrect statement about such benign tumors of the uterus:

a- They are estrogen dependent.
b- Asymptomatic cases are common.
c- They are completely benign & malignancy never develop
d- They shrink in size in response to treatment with LHRH AGONISTS.
e- They may be managed conservatively

4- All are indications for hysterectomy due to fibroid except

a- Associating complex hyperplasia with atypia
b- Old symptomatic females
c- Severe hemorrhage during myomectomy
d- Multiple subserous fibroids
e- Grandmultipara with HB 8 gm%

Case 5

A 35 years gravida 2, para 1 is pregnant now at 32 weeks. She suddenly complained of acute abdominal pain, associated with nausea & vomiting. U/S examination revealed normally situated placenta, normal amount of amniotic fluid & no adnexal swelling; only a large fibroid was seen 8x6 cm.

Medications were given & condition controlled. After delivery, patient was counseled for myomectomy but she refused to perform laparotomy although menses were becoming heavier & more painful

- What is the most probable cause of her acute abdomen?
- Why she is treated medically? When to perform surgery?
- In what circumstances would uterine fibroids cause pain

-
-
-

- What are the other conditions of acute abdomen with pregnancy at 32 weeks?
- After delivery, when could myomectomy be performed?
- What are the alternatives if she is refusing surgery?

- All the following may be done to ↓ hge during myomectomy except
  - b- A midline incision
  - c- Ring forceps on the ir fundibulo-pelvic ligament
  - d- Vasopressin injection
  - e- LHRH injection
  - f- Ligating the uterine artery

Case 6

A 43 year old divorced lady was admitted in the emergency room suffering from heavy vaginal bleeding for 4 days. On the day of admission she has passed several large blood clots. Her LMP was 4 months earlier. On examination, the patient is found pale, but there were no abdominal or vaginal abnormalities.

- How to manage the acute bleeding
- How to exclude malignancy in such patient
- What is your diagnosis if there investigations failed to find any obvious cause?
- How to treat such condition?

Case 7 (slide)

A 43 yr old woman is referred to hospital with painful periods for the last 2 years. She bleeds every 24 days with menses lasting for 7-9 days. The pain starts 36 hours before menses and lasts till day 5 bleeding. There is no intermenstrual bleeding or discharge. On abdominal examination there is vague tenderness in the suprapubic area. Bimanual examination revealed a 10 wks sized uterus which is soft. There was no tender motion of the cervix, or adenexal masses. U/S showed a bulky uterus with IUCD inside. Endometrial thickness was 11 mm. Hb was 8.8 mg/dl

- **Discuss differential diagnosis**
- **Establish your management**
- **The major complaint of this patient (arrow) is**
  - a- Infertility & dysmenorrhea
  - b- Menorrhagia & dysmenorrhea
  - c- Pressure symptoms
  - d- Pelviabdominal mass
  - e- Menouria

Case 8

A 30 year old NG married 2 years ago complained of prolonged heavy periods associated with severe pain during menses. She had always experienced dysmenorrhea during the first day of menses, but for the last 2 years, this pain lasted for more than 3 days together with a suprapubic ache. There was also associating menstrual clots in the last 2 years.

Examination revealed enlarged uterus 14 weeks with a firm right sided fundal fibroid. D&C was performed, same clinical data were confirmed, and simple endometrial hyperplasia was confirmed by histopathology.

HSG proved right tuba block, so laparotomy was decided to remove the fibroid. However, it was found impossible to enucleate the fibroid as no capsule or line of cleavage were found

- **What is the mostly diagnosis, why?**
- **What is the possible etiology?**
- **How to treat such a condition?**
- **Would findings on D&C change diagnosis?**
- **What are the advantages of HSG in infertility**
  - **Diagnostic** .....tube, uterus, ovary
  - **Therapeutic**

Miscellaneous MCQ

1- All the following about polypi are true except

a- They may also arise from cervix
b- Commonly are due to fibroids
c- They are usually precancerous
d- They must be removed surgically
e- They may lead to metrorrhagia

2- Endometrial hyperplasia could be expected in the following conditions:

a- Turner syndrome
b- Cystic teratoma.
c- PCO
d- Sertoli-Leydig cell tumor.
e- Dysgerminoma.

3- Complex Endometrial hyperplasia without atypia in a woman aged 41 yrs 2- Complex Endometrial hyperplasia without atypia in a woman aged 41 yrs could be treated by the following except:

a- Progestins.
b- Steroids
c- Endometrial curettage
d- COC
e- Hysterectomy

4- Arias-Stella reaction may be found with the following except:

a- Normal pregnancy.
b- Ectopic pregnancy.
c- Endometriosis.
d- PID.
e- Abortion.

5- All the following statements about metropathia haemorrhagica are correct except

a- Ovaries may have a clear cyst
b- May be preceded by amenorrhea
c- Hysterectomy may be needed
d- Secretory endometrium may be seen
e- LH-RH analogues in long term may be used

6- Abnormal genital bleeding may be due to all the following except

a- Hypothyroidism
b- Hypertension
c- Tuberculosis
d- Von Willebrand disease
e- Schroeder's disease

Genital bleeding

Write short notes / essay on

- Differential diagnosis & management of menorrhagia
- Dysfunctional uterine bleeding (types & management)
- Causes of perimenopausal bleeding
- Definition, etiology, pathology, investigation & management of post menopausal bleeding
- How would you investigate a case of postmenopausal bleeding
- Contact bleeding
- Differential diagnosis of postcoital bleeding

Uterine tumors

Write short notes / essay on

- Symptoms of uterine fibroid tumors
- Diagnosis, complications & management of uterine leiomyoma
- Complications of fibroid uterus
- Secondary changes of leiomyoma (uterine fibroid) complications of fibroid
- Endometrial hyperplasia (causes, types, complications & management)
- The significance of endometrial hyperplasia? Name the pathological varieties
- Early diagnosis & management of endometrial carcinoma
- Etiology, diagnosis & management of endometrial carcinoma
- Differential diagnosis of uterine polyps
- Treatment of choriocarcinoma
- Diagnosis of pelvic endometriosis
- Treatment of pelvic endometriosis
- Non-surgical treatment of endometriosis
- Chocolate cyst of the ovary < EΦ Endometroid tumor of the ovary

Enumerate

- Causes of endometrial polyps
- Complications of fibroid uterus

❷

CANCER

- CERVIX
&
- OVARY

❶ Contact bleeding

Introduction

- It is vaginal bleeding occurring only after contact occurring during
  - . Sexual intercourse
  - . Vaginal examination
  - . Vaginal douching

Etiology

- Cervicitis, cervical ulcers (erosion), cervical ectopy
- CIN, cancer cervix
- Vaginal or uterine tumors bulging into vagina
- Severe vaginitis esp senile type

.....Contact bleeding is considered CIN until proved otherwise.....

Diagnosis

- History
  - Cervicitis → offensive vaginal discharge, backache
  - CIN → is usually asymptomatic
  - Invasive cancer cx → pain, discharge, weight loss
  - Fibroid polyp → associating menorrhagia, spasmodic dysmenorrhea

- Examination
  - General
    - . Anemia & its degree
    - . Metastasis & uremia (in cancer cervix)
    - . Fever (in acute cervicitis)
  - Locally →
    - . Cancer cervix
      - *Cauliflower mass*
      - *Infiltrating mass* (worst)
      - *Malignant ulcer*
      - *Nodule or Barrel shaped cervix*
    - . Chronic cervicitis
      - *Mucous polyp*
      - *Nabothian follicles*
      - *Chronic hypertrophic or atrophic cervicitis*
      - *Cervical ulcers*

Investigation

- **Cancer cervix & CIN**

1- Pap smear

. By Ayre's wooden spatula
. Rotate it 360 around cervix
. Stain by Papanicolaou stain
. If suspicious, do

2- Colposcopy

. Shows abnormal epithelium
. Shows abnormal vascular pattern (punctate or mosaic)
. Paint with acetic acid: abnormal areas → aceto-white
. Paint with Schiller or Lugol's iodine
. If suspicious, take

3- Biopsy

. Colposcopic directed
. Cone biopsy
. Large loop excision of the TZ

- **Cervicitis**

1- Blood → ↑ ESR, TLC, CRP
2- Culture → swab from endocervix for gonorrhea or chlamydia
3- Complications

. Colposcopy → to exclude malignant conditions
. Infertility → post coital test

Treatment of the cause

- **CIN**

. Atypical cells or CIN (I).....ttt of infection for 6 weeks
. CIN (II & III).....local destructive therapy

- **Cancer cervix**

Ia_1 → Simple hysterectomy or conization
Ia_2 → Extended hysterectomy
I_b & II_a → Surgery (Radical TAH) or Irradiation (esp II_a) or both
II_b & III & IV→ Irradiation
IVa → Some cases exentration +/- irradiation, others →palliative
IVb → palliative

- **Infection**

. Prophylaxis ⇨ aseptic techniques during delivery, D&C, IUCD
. Medical ⇨ antiseptic pessaries e.g. albothyl
. Cauterization ⇨ electrocautery, cryocautery, chemical, Laser
. Surgery⇨ conization, amputation, rarely hysterectomy

❷ Prophylaxis for female genital tumors

Aim

- Early detection of tumors, thus treatment will be more easier & conservative ➡ better prognosis
- Mechanism is done by detection of the high risk population, thus screening them for the early stages while they are still asymptomatic

Types of genital tract tumors

- Invasive cancer cervix could be detected early while still CIN
- Cr endomet. could be detected early while still endomet. hyperplasia
- Cancer ovary could be early diagnosed

Cancer cervix

- High risk population
  - . Age → 30 – 40 yrs
  - . Social class → low (early marriage, multiparity)
  - . Race → ↓ in Moslems & Jewish
  - . Sexual activity, esp if early (<18) with multiple uncircumcised males
  - . Viral infections (oncoviruses) HPV 16, 18
  - . Smoking
- Screening
  - Pap smear
    - . By Ayre's wooden spatula
    - . Rotate it 360 around cervix
    - . Stain by Papanicolaou stain
    - . If suspicious, do
  - Colposcopy
    - . Shows abnormal epithelium
    - . Shows abnormal vascular pattern (punctate or mosaic)
    - . Paint with acetic acid: abnormal areas → aceto-white
    - . Paint with Schiller or Lugol's iodine
    - . If suspicious, take
  - Biopsy
    - . Colposcopic directed
    - . Cone biopsy
    - . Large loop excision of the TZ
- Prophylaxis (TTT of CIN)
  - Atypical cells or CIN (I).....ttt of infection for 6 weeks
  - CIN (II & III).....local destructive therapy (cautery or LEEP)

Cancer endometrium

- High risk population
  - . Age ⇨ 60 yrs i.e. postmenopausal
  - . High class ⇨ late marriage, low parity, no lactation
  - . Race ⇨ white
  - . Menstrual ⇨ early menarche, anovulatory cycles, late menop.
  - . Unopposed hyperestrogenemia
    - Endogenous → PCO.....Estrogen secreting tumor
    - Exogenous → ERT....Tamoxifen (for >5 yrs)
  - . Cancer corpus synd ⇨ association of obesity, DM, hypertension

- Screening
  - TV.US (endometrial thickness:- 4–5 mm)
  - If > 6 mm → biopsy (fractional curettage, Pipelle, hysteroscopy)

- Prophylaxis (TTT of endomet. hyperplasia)
  - ⇒ Progestins
    - Provera 10 mg/d for 21
    - Levonorgestrel IUCD (Mirena)
  - ⇒ COC, if failed
  - ⇒ Danazol or Dimetriose (gestrinone)
  - ⇒ GnRH analogues

Cancer ovary

- High risk population
  - Old age
  - Familial → +ve family history
  - Genetic → association with
    1. Ovarian + breast cancer..... BRCA
    2. Ovarian + colon cancer.....Lynch type II
  - Repeated ovulation trauma (nulliparity, late marriage)
  - Drugs for induction of ovulation
  - Exposure to asbestos or talk powder or Mumps

- Screening
  - Periodic bimanual examination
  - Tumor markers (CA125)
  - TVUS ± color Doppler

- Prophylaxis
  - Removal of ovarian swellings in any ovarian swelling > 6 cm
  - Prophylactic oophorectomy with hysterectomy if > 45 years
  - COC in high risk groups

Classification

- **CIN I** ➟ deep ⅓ only
- **CIN II** ➟ deep ⅔
- **CIN III** ➟ the whole thickness

** Bethesda classification

LG.SIL (Low grade-squamous intraepithelial lesion)
↳ corresponds to → CIN I & changes d.t. HPV infection

HG.SIL (High grade-squamous intraepithelial lesion)
↳ corresponds to → CIN II & III

Investigations

1- Pap smear
- . By Ayre's wooden spatula
- . Rotate it 360 around cervix
- . Stain by Papanicolaou stain
- . If suspicious, do

2- Colposcopy
- . Shows abnormal epithelium
- . Shows abnormal vascular pattern (punctate or mosaic)
- . Paint with acetic acid: abnormal areas → aceto-white
- . Paint with Schiller or Lugol's iodine
- . If suspicious, take

3- Biopsy
- . Colposcopic directed
- . Cone biopsy
- . Large loop excision of the TZ

Treatment

Atypical cells or CIN (I).....ttt of infection for 6 weeks then ☽

CIN (II & III)

↳ **Local destructive therapy** ⇨ (95 % cure)

1- *Cautery* (electric, cryocautery, laser)
2- *LEEP / LLETZ*.....✔ very popular now (but → infection)
3- *Cone biopsy* (cold knife)...✗ complications ☽
- Hemorrhage (1^{ry} or 2^{ry})
- Infection → infertility
- Cervical stenosis → cervical dystocia
- Cervical incompetence → abortion or PTL

↳ **Hysterectomy** ⇨ in old patients, completed their family

Dermoid cyst

Introduction

- It is the commonest *germ* cell tumor
- It is the commonest ovarian tumor in YOUNG / PREGNANT
- Benign (= mature cystic teratoma).....rarely turn malignant
- Has a long pedicle (lies in UV or Douglas pouch) ∴ liable to all *complications*

Predisposing factors for ovarian tumors is unknown, m.b.d.t.

- *Aging* ✓✓
  - Familial → +ve family history
  - Genetic association
- *Incessant 'repeated' ovulation trauma*
  - Nulliparity, late marriage (high social class)
  - Drugs for induction of ovulation
- *Exposure to* asbestos or talk powder or Mumps

Pathology

* Macroscopic → Usually contains greasy or sebaceous material
± Hair, teeth, bones, cartilage
Rokitansky tubercle (a inner protuberance)

* Microscopic: structures may be →
- Ectodremal → hair, skin, sebaceous glands, nervous tissues
- Mesodermal → muscle, bone, cartilage, teeth (appear on X-ray)
- Endodermal → intestinal & thyroid epithelium

Clinical picture

Symptoms

▼ Most cases are asymptomatic & discovered accidentally
▼ If symptomatic, they are vague, non-specific → late discovery

- General ⇨ cachexia, metastasis only if there is malignant change
- Abdominal (most common) ⇨ Dyspepsia, Discomfort, Distension
- Local bleeding due to pelvic congestion

Signs

- Abdominal ⇨ only acute abdomen if complicated
- Local ⇨ mass in adenexae, D. pouch, uterovesical pouch
  - mostly cystic
  - mostly unilateral

Complications of dermoid cyst

1. **Torsion** (the commonest) ✓✓
   Def ⇨ It is twist or axial rotation of a pedunculated tumor
   Predisposing factors
   - Moderate sized tumors / Long pedicle / Mobile → no adhesions
   - Pregnancy → upward displacement of the tumor
   - Puerperium → the *commonest* pdf

   Types ⇨ *Acute or Chronic* (parasitic ovarian tumor)
   Clinical picture ⇨ sudden severe abdominal pain + shock + vomiting

2. **Hemorrhage** (internal or external in peritoneal cavity)
   Etiology → spontaneous or after trauma or torsion
   C/P → shock + acute abdomen (rapid ↑ in size + tender tumor)

3. **Rupture**
   Etiology → may occur after hemorrhage, torsion or trauma
   Effects → Chemical (aseptic) peritonitis

4. **Infection**
   C/P → Picture of ovarian abscess (if ruptures → peritonitis)
   TTT → laparotomy + antibiotics (if adhesions → only deroofing + drainage)

5. **Incarceration**
   Etiology → adhesions → entrapment in the pelvis → hge, up to rupture
   C/P → pressure effects on bladder, urethra, rectum & pelvic veins.

6. **Malignancy** ⇨ there are certain criteria of malignant suspicion

7. **Pressure effects**

8. **Reproductive effects**

* *Effect* . *On pregnancy* ⇨ malpresentation, non-engagement, obstructed labor
. *On tumor* ⇨ ↑ all the complications (esp 2nd trimester & pueperium)

* *Management*
- During pregnancy
  .If < 6 cm → left alone (mostly CL cyst → disappear at 14wk)
  .If > 6 cm or solid → laparotomy (fear of malignancy):
  2nd trimester & 1st week puerperal → best time
  1st trimester → abortion / 3rd trimester → technical difficulty
  .....If suspect malignancy or complicated at any time → immediate surgery
- During labor ⇨ If not obstructing → VD then laparotomy within a week

Data suggestive of malignant transformation

1.Symptoms Old age or children Postmenopausal bleeding Cachexia & Anorexia Dyspepsia & GIT symptoms Pain Rapid growth	3.Investigations Blood : ESR increased Tumor markers +ve Laparoscopy Laparotomy Cytology for ascitic fluid Biopsy
2.Signs Tumor . Bilateral, fixed, tender . Metastasis . enlarged paraortic LN Nodules in - Douglas Pouch - Liver Ascites, edema of LL	4.During operation . Bilateral, fixed, solid . Metastasis . enlarged LNs Nodules in DP, omentum, peritoneum - Papillae on outer surface - Areas of hge & necrosis - Large blood vessels on surface

Treatment

- Prophylaxis by
  - Periodic bimanual examination
  - Tumor markers (CA_{125})
  - TVUS ± color Doppler ✓

- Removal of ovaries swellings in
  - High risk groups → at 35 yrs (after completing family)
  - Any ovarian swelling > 6 cm or persistent
  - Prophylactic oophorectomy with hysterectomy if > 45 years

- Surgery

  * **Ovarian cystectomy** → e.g. dermoid cyst
    . Enucleation of cyst leaving the remaining healthy ovarian tissue
    . As in → young patient, uncomplicated, well demarcated cyst

  * **Ovariectomy (Ovariotomy)**
    . Removal of the ovary by 3 clamps
    . As in → young patient, complicated,
    or if the ovarian tissue is destroyed

  * **TAH + BSO** (best)
    . In old patient > 45 yrs & completed her family

Dysgerminoma

Introduction

- The commonest *malignant* germ cell tumor (50%)
- Occurs mainly in young females (esp if dysgenetic gonads with Y cell line)
- Undifferentiated → malignant (Solid, rapid growth, unilateral)
- May lead to PP (due to HCG secretion). Also secretes LDH

Predisposing factors

- *Aging* ✓✓
  - Familial → +ve family history in only 5% (esp ≥ 1, 1st degree)
  - Genetic → association with breast cancer (BRCA) or cancer colon
- *Repeated ovulation trauma*
- *Exposure to* asbestos or talk powder or Mumps

Pathology

- Macroscopic → greyish pink (with areas of hge & necrosis)
- Microscopic → large cells (with dark nuclei) + many lymphocytes

Clinical picture

Symptoms

▼ Most cases are asymptomatic & discovered accidentally
▼ If symptomatic, they are vague, non-specific → late discovery (stage

- General ⇦ cachexia, fever, metastasis
- Abdominal (most common) ⇦ Dyspepsia, Discomfort, Distension
- Local
  - Bleeding if → functioning……pelvic congestion….2ry to uterus
  - Amenorrhea if → bilateral destructive……hormonal……..cachexia

Signs

- General 🗝 + Hormone effects → precocious puberty
- Abdominal
  - Pelviabdominal mass (mobile or fixed…….cystic or solid …unilateral or bilateral…..tender (complicated) or not
  - Ascites, omental cake
  - Liver metastasis / Renal mass
  - Umbilical nodule (Sister Mary Josef nodule)
- Local ⇦ mass in adenexae, D. pouch, uterovesical pouch

Spread

- Direct = implantation (via peritoneal cavity) → commonest & earliest
- Lymphatic → pelvic → para-aortic → Wirchow (the *signal* LN)
- Blood → late (BLBL)

Staging (FIGO, 1986)

Ovarian 1	A	One ovary
	B	Both ovaries
	C	1 or 2 ovaries 🗝 +ve
Pelvic 2	A	Tubes --/- uterus
	B	Other pelvic organs
	C	Pelvic spread 🗝 +ve
Abdom. 3	A	Microscopic metastasis, no LN involvement
	B	Implants < 2 cm, no LN involvement
	C	Implants > 2 cm and/or LN involvement
Distal 4		Including liver parenchyma or +ve cytology for malignant cells in pleural fluid

Complications

1. **Torsion** (the commonest)
   - *Def* ⇨ It is twist or axial rotation of a pedunculated tumor
   - *Types* ⇨ *Acute or Chronic* (parasitic ovarian tumor)
   - *Clinical picture* ⇨ sudden severe abdominal pain + shock + vomiting

2. **Hemorrhage** (internal or external in peritoneal cavity)
   - *Etiology* → spontaneous or after trauma or torsion
   - *C/P* → shock + acute abdomen (rapid ↑ in size + tender tumor)

3. **Rupture**
   - *Etiology* → may occur after hemorrhage, torsion or trauma
   - *Effects* → dissemination of malignancy

4. **Infection**
   - *C/P* → Picture of ovarian abscess (if ruptures → peritonitis)
   - *TTT* → laparotomy + antibiotics (if adhesions → only deroofing + drainage)

5. **Incarceration**
6. **Pressure effects**

Investigations

1) Laboratory CBC, Hb%, ESR (↑ed in malignancy)
2) Tumor Markers *(enzymes)* → ALK-P, LDH, transferases
3) Radiological → *U/S, CT, MRI* → for tumor, solidity, extent
4) Endoscopy → cystoscopy / procto-sigmoidoscopy / laparoscopy

Data suggesting malignancy

1.**Symptoms** Old age or children Postmenopausal bleeding Cachexia & Anorexia Pain Rapid growth	3.**Investigations** Blood : ESR increased Tumor markers +ve Laparoscopy Laparotomy Cytology for ascetic fluid
2.**Signs** Tumor . Bilateral, fixed, tender . Metastasis . enlarged paraortic LN Nodules in - Douglas Pouch - Liver Ascites, edema of LL	4.**During operation** . Bilateral, fixed, solid . Metastasis . enlarged LNs Nodules in DP, omentum, peritoneum - Papillae on outer surface - Areas of hge & necrosis

Treatment

➡ Prophylaxis

- Periodic bimanual examination, Tumor markers (CA125)
- TVUS ± color Doppler ✓
- Prophylactic oophorectomy with hysterectomy if > 45 years

➡ Active

1- Surgical.....Exploratory laparotomy ✓(for almost all patients)

- STAGE I → TAH & BSO + infracolic omentectomy + lymphadenectomy

> Conservative surgery → unilateral oophrectomy can be done if
> - Young patients with intact capsule (stage Ia)
> - Wedge biopsy of the other ovary → no malignancy

- STAGE II, III, IV → Debulking (optimum cytoreduction if residuals <1cm)
- PALLIATIVE SURGERY IN advanced cases → for intestinal obstruction

2- Chemotherapy *combination of:-*

.For germ cell tumors → **B**leomycin, **E**toposide, cis-**P**latinum (BEP)
.Given for 6-12 cycles, each cycle takes 1 day & repeated every month

➡ Follow up

- Tumor markers → CA_{125} every 3 months
- Chest X-ray & CT scan (not so accurate)
- *2nd look laparoscopy or laparotomy* ✗

⑥ Twisted ovarian cyst

Types of ovarian swellings

Neoplastic				Non-neoplastic = (functional)
1ry			2ry	
Benign	*Border-line*	*Malignant*	- Typical - Atypical	
	Potentially Malignant	Carcinoma Sarcoma		

Def of twist / torsion ⇨ axial rotation of a pedunculated tumor

Predisposing factors

- Moderate sized tumors / Long pedicle / Mobile → no adhesions
- Pregnancy → upward displacement of the tumor (esp 2nd trim.)
- Puerperium → the *commonest* pdf

Precipitating factors

- Sudden movement of the patient
- External abdominal trauma or PV

Types

- *Acute torsion* → hge, necrosis or gangrene of a tumor
- *Chronic torsion* → adhere to a surrounding organ → parasitic tumor

Clinical picture

- *Sudden* severe abdominal pain + shock + vomiting
- *Signs* → fever / Abdomen: T, R, RT

Treatment

- *laparotomy* → adnexectomy (avoid untwisting of the pedicle)
- *further management depends on stage*
  - **Stage I** ⇨ TAH & BSO + LN + omentectomy + appendicectomy
  - **Stage II, III, IV** ⇨ debulking (optimum cytoreduction: residuals <1cm)
  - **Palliative surgery** ⇨ in advanced cases (e.g. for intestinal obst.)
- *Postoperative Chemotherapy*
  - **Cyclophosphamide, Adriamycin, cis-Platinum** (CAP)
  - **For germ cell tumors** → Bleomycin, Etoposide, cis-Platinum (BEP)

❼ Genital tumors with pregnancy

I- Fibroid with pregnancy

➟ Effect of fibroid on pregnancy

Pregnancy		Labor
EARLY	LATE	
1. Abortion 2. Ectopic (tubal stretch) 3. Incarcerated RVF gravid Uterus	1. Pressure manifestations.... 2. Malpresentation 3. Non-engagement of Presenting part 4. PTL 5. Acute abdomen.....	1st stage → inertia 2nd stage → obstruction 3rd stage→ retained placenta

➟ Effect of pregnancy on fibroid

- *Due to increased hormones*
  - ↑ size, vascularity
  - Softening & degeneration
  - Difficulty to identify by palpation
- *More liable to Complications (esp 2nd trimester)*
  - RED DEGENERATION → acute abdomen
  - SUBSEROUS FIBROID → torsion / hge d.t. ruptured telangiectasia
  - SUBMUCOUS FIBROID → extrusion or trauma → ulceration & infection

➟ Management

(conservative mainly)

Pregnancy	Labor	Puerperium
• No Myomectomy • If Red Degeneration Rest, analgesics, antipyretics • Surgery Only If - Failed medical ttt of red degeneration (rare) - If torsion or hge from subserous fibroid	• No obstruction Allow vaginal delivery • Obstruction CS. No myomectomy except if pedunculated subserous • If old + multiple fibroids Cesarean hysterectomy	• Myomectomy done after 3-6 m (the myoma will be less vascular)

2- Cancer cx in pregnancy

➟ C/O → bleeding with pregnancy
➟ Inv → the same as in non-pregnant
But take care: cone biopsy → hge., abortion

CIN → continue pregnancy (preg. doesn't ↑ CIN), then either
- VD followed later on by treatment....., or
- Cesarean hysterectomy if completed her family

Invasive cancer

1st trimester → Radical hysterectomy in toto or
Irradiation (usually followed by spontaneous abortion)

2nd trimester → Radical hysterectomy in toto or
Hysterotomy followed by *irradiation* after 2 weeks

3rd trimester → wait for maturity → Cesarean Wertheim operation or
CS followed by *irradiation* after 2 weeks

3- Ovarian swellings with pregnancy

➟ DERMOID CYST is the commonest: 25%
➟ *Effect*
. *On pregnancy*
1st trimester → abortion, ectopic
2nd trimester → PTL, pressure effects
3rd trimester → malpresentation, non-engagement, obstructed labor
. *On tumor*
↑ all the complications (esp in 2nd trimester & pueperium)

➟ *Management*
* **During pregnancy**
.If < 6-8 cm → left alone (mostly functional)
.If > 6-8 cm or solid → laparotomy (fear of malignancy):
- 2nd trimester & 1st week puerperal → best time
- 1st trimester → abortion / 3rd trimester → technical difficulty
.....If suspect malignancy or complicated at any time → immediate surgery
* **During labor**
. If not obstructing → VD is allowed then laparotomy within a wk
. If obstructing → CS & surgery for the tumor

Salma Ali Ali Ali, 50 years, P5+0 , Postmenopausal bleeding for D&C

Complaint: Vaginal bleeding for 1 week.

Menstrual history: She is menopausal since 2003

Obstetric history: P5

- 1st, 1982 at home - by a doctor, SVD, full term, living male no pre or post natal complications
- 2nd, 1984 at home - by a doctor, SVD, full term, living male no pre or post natal complications.
- 3rd, 1987 at home - by a doctor, SVD, full term, living female no pre or post natal complications .
- 4th, 1996 at home - by a doctor, SVD, full term, living female no pre or post natal complications .
- 5th, 2004 at home - by a doctor, SVD, full term, living male no pre or post natal complications.

Past history:

- Cholecystectomy was done 11 years ago
- D&C was done 8 months ago
- No hypertension, diabetes, no admission to fever hospital, no chest or heart diseases, no drug allergy.

Family history: No hypertension, no diabetes, no similar condition.

History of present illness:

- The patient was menopausal 3 years ago, 10 months ago she started to suffer from an attack of sudden vaginal **bleeding** which was not associated with blood clots. Bleeding didn't lead to fainting attacks, there was no palpitation or dyspnea & there were no similar bleeding attacks from other body orifices.
- It was not related to intercourse (no contact bleeding)
- There was no associated low **backache** or any other abdominal pain, no abnormal vaginal **discharge**, no abnormal **swellings** whether vaginal or abdominal.
- The patient sought medical advice; a D&C was performed in a private hospital where she was told that there was nothing abnormal. Again, a week ago, she experienced another attack of vaginal bleeding after which the patient was transferred to our hospital. Ultrasound was done & no pelvic swellings were revealed. The patient is prepared to perform another D&C tomorrow.
- *A stumba:* There were no symptoms suggestive of ***general etiology, other swelling, metastasis***, **urinary**, or **rectal** symptoms
- Also systematic review showed no relevant symptoms……

Oral questions

❖ **Define menopause?** physiological ***permanent*** cessation of menstruation for 6–12 months in any woman older 40 yr due to complete exhaustion of ovarian follicles. It is diagnosed ***retrospectively*** & changes usually occurs ***gradually***

❖ **What are the causes of postmenopausal bleeding**

- *Malignant tumors of genital tract* ⇨ **endometrial carcinoma**
- *Benign conditions of genital tract* ⇨ atrophic (*senile*) endometritis, polyps
- *Complications of HRT or Prolapse* (trophic ulcers)
- *Non-gynecological conditions* ⇨ hematologic diseases, severe hypertension

❖ **How to exclude malignancy**

- *Transvaginal ultrasonography* ⇨ endometrial thickness not > 4–5 mm
- *Endometrial biopsy* ⇨ fractional curettage or aspiration cannula (Pipelle)
- *Hysteroscopy* ✓

❖ **What is most accurate**.....hysteroscope (visualize & take a biopsy

❖ **What ca be done without anesthesia**.....Pipelle, as it diameter is thinner than the internal os (3–4 mm)

❖ **How to treat cancer endometrium?** according to stage:

Stage			TTT
1	A	Endometrium only	**Surgery**
	B	< ½ endometrium	TAH & BSO
	C	> ½ endometrium	± LN sampling
2	A	Cervical gland	**Surgery + Radiotherapy (or Wertheime)**
	B	Cervical stroma	TAH & BSO followed by radiotherapy
3	A	Tube ± ovary	**Radiotherapy**
	B	LN	Brachytherapy + Teletherapy
	C	Vagina	
4	A	Bladder / rectum	**Palliative**
	B	Distal metastasis	Hormonal + Chemotherapy

❖ **What are the indications of postoperative radiotherapy?**

- *Mac* . The tumor infiltrates > ½ myometrium
  . LN involvement
- *Mic* . Grade II or III
  . Papillary or clear (serous) cell carcinoma

❖ **What are the risk factors for cancer endometrium?**

- *Patient ccc* ⇨ early menarche, anovulatory cycles, late menopause
- *Hyper-estrogenemia* ⇨ PCO, estrogen secreting tumor, ERT
- *Association* ⇨ obesity, DM, hypertension

❖ **How to exclude an ovarian tumor**

- *Symptoms* ⇨ cachexia, non-specific GIT symptoms (3d)
- *Signs* ⇨ Bilateral or unilateral, fixed or mobile, tender or not
  Ascites, Sister Mary Joseph nodules, masses in DP
- *Investigations* ⇨ T.markers, U/S, Doppler, CT, laparoscopy

❖ **What are the types of ovarian neoplasms**

Common epithelial tumors (70–80%)	*Sex cord-stromal tumors* (10%)	*Germ cell tumors* (5–10%)
- Mullerian product	- Granulosa-Stroma tumor	- Undifferentiated:
.Serous tumors	.Granulosa ± theca	dysgerminoma
.Mucinous tumors	.Pure thecoma	- Poorly differentiated:
.Endometroid tumors	.fibroma	embryoma, polyembryoma
- Wolfian product	- Sertoli-Leydig tumors	- Differentiated:
.Mesonephroid tumor	- Gynandroblastoma	.Embryonic (teratoma)
.Brenner tumor	. Both 1+2	.Extraembryonic (choriocarcino /EST)

❖ **How to treat malignant ovarian tumor?** according to stage:

❶ *Exploratory laparotomy*

- Stage I → TAH & BSO + omentectomy + lymphadenectomy
- Stage II, III, IV → maximum debulking (optimum cytoreduction)

❷ *Chemotherapy* ⇨ Cyclophospamide + Adriamycin + cisPlatinum

❖ **How to differentiate genital tumors?**

	Endometrium	Ovary	Cervix
Age	> 60	any age	35 – 45
Symptom	postmenop. bleeding	abd. distension	contact bleeding
Sign	small uterus, except: + fibroid, pyometra	Adnexal swelling	Suspicious cervix
Screen	TV-US (4–5 mm)	-Examination -Tumor markers -Doppler	- Pap smear taken (Ayre's spatula) - Colposcope
Investig.	D&C…hysteroscope	U/S…T-markers	….Biopsy
Staging	Surgical	Surgical	Clinical
Treatment	Surgery mainly: Hysterectomy	Laparotomy ± chemotherapy	Surgery ….or… Radiotherapy
Prognosis	The best (early diagnosis)	The poorest (late diagnosis)	

Mirvat Samir Sabry, 43 years, P4+1
Perimenopuasl bleeding for further evaluation

Personal history:

- *Mirvat Samir Sabry*, 43 years, married for 20 years & having 4 living children. She's a housewife & lives in the 6th bay, Madinat Nasr, Cairo. She has no special habits of medical importance

Complaint: irregular vaginal bleeding for 2 months

History of Present illness:

- The condition started 2 months ago by repeated attacks of irregular vaginal bleeding. Cycles became totally irregular (*metro-rrhagia*). She changed from 6--8 napkins daily of bright red blood, the patient also noticed passage of blood clots. Bleeding didn't affect her general condition, also it didn't occur from any other orifices.
- Also, few spotting occurred after intercourse & stops spontaneously after some-while (contact bleeding)
- there were no associated swellings whether abdominal or vaginal and also there was no vaginal discharge
- 15 days ago, the patient developed an attack of severe lower abdominal colicky pain that radiated to the back, which gave the sensation of heaviness. It was relieved by simple analgesics & disappeared within 2 days.
- The patient sought medical advice & during vaginal examination by doctor in a private clinic, contact bleeding occurred in the form of slight fresh bright spots that gradually decreased after few hours.

A stumba

- There were no symptoms suggestive of ***general etiology***.....
- There were no symptoms suggestive of ***other swelling*** .....
- There were no symptoms suggestive of ***metastasis***.....
- There were no associated **urinary**, or **rectal**.....symptoms
- Also systematic review showed no relevant symptoms.....

Oral questions

- **Is there is a certain clue for diagnosis here?** Contact bleeding
- **What are the causes of contact bleeding?**
  - . Cervicitis / cervical erosions / cervical ulcers
  - . CIN / Cancer cervix
  - . Vaginal or uterine tumors bulging into vagina
  - . Severe vaginitis esp senile type
- **How to diagnose CIN?**
  - *Cervical cytology*.....using Ayre's wooden spatula
  - *Colposcope*.....if Pap smear is suspicious
  - *Cervical biopsy* .....for definitive diagnosis
- **What are the risk factors for cancer cervix**
  - *Sexual activity, esp* ⇨ early age with multiple uncircumcised partners
  - *Viral infections* ⇨ HPV 16, 18 (while 6, 11...condyloma accuminata)
  - *Smoking*
- **What is the ttt of cancer cervix?** *according to stage:*

Stage			TTT
1	A	A-1..... < 3mm	TAH
		A-2.....5–7 mm	Extended hysterectomy
	B	B-1.....< 4cm	Radical hysterectomy
		B-2.....> 4cm	
2	A	Upper ⅔ vagina	
	B	< ½ parametrium	Radiotherapy
3	A	Lower ⅓ vagina	
	B	> ½ parametrium	
4	A	Bladder / rectum	
	B	Distal metastasis	Palliative

- **What are the advantages of surgery over radiotherapy**
  - Early & late complications of radiotherapy are avoided
  - Better psychologically (the tumor is removed!)
  - Suitable for young patients (no vaginal stenosis / ovaries preserved)
- **What are the contraindications for radiotherapy?**
  - Presence *of Pelvic*
    - . infection → flaring up
    - . adhesions (around bowel) → more complications
    - . associating *pelvic* lesion e.g. ovarian cyst or fibroid
  - Relative in young patient → vaginal stenosis & premature menopause
  - Radioresistant tumors as in adenocarcinoma

❖ **What are other causes of abnormal genital bleeding**

	1- General	2- Local
Organic	- Bleeding tendency - Hypertension - Organ failure - Endocrinological - Drugs . anticoagulants . hormones	* Pregnancy complications * Pelvic pathology - Cong. - Traumatic IUD - Inflammatory PID - Tumor (benign / malignant)
	1- Ovular (cyclic)	2- Anovular (acyclic)
Functional	- Functional polymenorrhea - Irregular ripening of end. - Irregular shedding of end. - Halban's disease	* Metropathia haemorrhagica * Threshold bleeding

❖ **The case was found to be a cervical polyp, how could you confirm this?** local vaginal cusco speculum

❖ **What are the types of polypi ?**

Cervical	Corporal
- Mucous polyp	- Adenomatous
- Inflammatory	- Placental
- Fibroid polyp	- Fibroid
- Malignant polyp	- Malignant

❖ **What are the symptoms of polypi?**

- *Bleeding* . Postmenopausal or perimenopausal
  . Menorrhagia / Metrorrhagia (ulceration)
  . Contact (considered malignant until proved otherwise)
- *Discharge* → leucorrhea (pelvic congestion) or offensive (infection)
- *Pain* → colicky lower abdominal pain (uterus trying to expel it)

❖ **What are the complications of polypi?**

- *infection* → 2^{ry} to trauma & ulceration
- *Malignancy* (rare) → squamous metaplasia of epithelium

❖ **How to differentiate uterine from cervical polypi?**

- *Sound* → pass it around the polyp:
- *Hysteroscopy, HSG, pelvic US*

❖ **What is the definite therapy?**

- *Polypectomy* → by polypectomy forceps ± cauterization of polyp base
- *D&C* is better → . Explore the uterine cavity for other small polypi present.
  . Associated pathology as endometrial hyperplasia
- *Send for histopathology* → to exclude malignancy

Case I (slide)

A 36 years old lady, P2+2, presented with vaginal bleeding mostly in the form of metrorrhagia. A cervical smear was done and revealed highly suspicious cells as shown on the slide. A cervical cone biopsy was performed and its histopathological report showed CIN III

- **Name the type of this smear & state its indications?**
  - Any suspicious cervix
  - Routinely
    .Every 1 year if there are risk factors (HPV, multiple partners)
    .Every 3 years in any normal female
- **In assessing the histopathological type of CIN, all the following is taken into account except**
  a- Numbers of mitotic figures
  b- The nuclear/ cytoplasmic ratio
  c- Epithelial differentiation
  d- Crypt involvement is not a serious finding
  e- The presence of HPV
- **What further management will be done**
- **Would you change your management if the patient had no children**
- **Would you change your management if the margins of the cone biopsy are infiltrated with malignant cells**
- **What are the complications of cone biopsy?**
  - Hemorrhage (1^{ry} or 2^{ry})
  - Infection → infertility
  - Cervical stenosis → cervical dystocia
  - Cervical incompetence → abortion or PTL
- **What is the newest alternative? All are true about it, except**
  a- It is used even when a CO2 laser is available
  b- It requires anesthesia
  c- It is a cheap & effective way of removing the TZ
  d- Secondary haemorrhage is a rare complication
  e- Cervical stenosis may occur
- **The incorrect statement regarding exfoliative cytology to diagnose CIN**
  a- The aim is to sample the surface cells of TZ
  b- The sampling device must cover 360° of the cervix
  c- Fixation must take place immediately
  d- Aspiration of cells from post fornix is < useful than scraping ex surface
  e- The presence of endometrial cancer will be detected in >70% of cases

Case 2 (slide)

A 38 years old smoker lady have experienced heavy vaginal bleeding 2 days ago for which she was transferred immediately to hospital. After receiving 2 units blood, examination revealed no general or abdominal abnormality. However, on examining the cervix it was found to be replaced by a large 4x4 cm mass. Examination under anesthesia was decided to take a biopsy that revealed malignant & extending to the upper 1 cm from the vagina. A weak after the operation, the patient complained form urine dribbling from the vagina

- **What are DD of such large cervix**
  1-
  2-
  3-
  4-
- **What is the stage of that malignancy**
- **What was the operation done**
- **How to explain the complication that happened postoperatively, what are the possible risk factors for such complication?**
  - Entrapment with adhesions
  - Blind clamping on severe hge.
  - Excessive dissection of the ureter (devascularization)
- **What is the alternative to surgery? What are its contraindications / disadvantages?**
  - **Contraindications**
    - *Presence of Pelvic*
      . infection
      . adhesions
      . associating *pelvic* pathology
    - Relative in *young* patient
    - Radioresistant tumors as in adenocarcinoma
  - **Complications**
    - **Early**.....affection of rapidly dividing cells
    - **Late** (EAO) ...- GIT (radiation sickness, proctitis, enteritis)
      - Urinary (radiation cystitis, fistula)
      - Vaginal stenosis / Artificial menopause
      - Flaring up of infection

Case 3

Para 7+0 42 years old, presented with recurrent vaginal bleeding specially on contact for 3 months duration. Pelvic examination revealed a friable cauliflower mass that bleeds easily on touch from the anterior lip of the cervix.

- **Complete the points in history**.....Risk factors
  & examination.....General, abd, local
  & investing to justify your diagnosis.....EUA + biopsy
- **Mention the different causes of contact bleeding**
  - Infection } in cervix, vagina
  - Tumors } pedunculated polypi
- **The incorrect statement regarding the prognosis of cancer cx**
  a- Recurrence occurs in 35% of patients
  b- The majority of recurrence occurs 3 yrs after ttt
  c- The 5-yr survival rate for stage II is 50%
  d- Surgical manag. of local recurrence following radical surgery is disappointing
  e- In stage Ib & IIa there is little diff. between results of surgery & radiotherapy

Case 4 (slide)

A52-year-old lady was referred to colposcopy with severe atypia. Colposcopy showed changes consistent with CIN III. LLETZ was performed. Histopathology reported a cervical tumour. Excisional margins were clear of the disease.

- **What is the appropriate option?**
- **Pattern of CIN lesions by colposcopy don't include**
  a- Regular surface contour
  b- Stain brown with Lugol's iodine
  c- A marked aceto-white appearance
  d- Coarse epithelial punctuations
  e- Multi-sector involvement of the TZ

Case 5 (slide)

A 64 year old lady presents with heavy postmenopausal bleeding. She has never had a smear. A hard ulcerative lesion was found on the cervix. She complains of leaking clear fluid through the vagina.

- **State the complete final diagnosis**
- **Differential diagnosis of this ulcer**
  - Cervical ectopy → bright red area d.t. columnar epithelium
  - Trophic ulcer in prolapse → cr cx may occur with prolapse
  - ✧ Chancre of cx → round ulcer with punched sharp edges
  - ✧ Bilharzial ulcer → multiple, dirty shallow floor, irregular
  - ✧ TB ulcer → single / multiple, undermined edge, yellow floor
  - ✧ Herpetic ulcers → multiple, small, greyish, painful

Case 6 (slide)

A GMP patient 47 years old, presented with vaginal bleeding mostly in the form of spotting, esp. in the last few weeks. Vaginal speculum examination revealed a small polyp, coming out of the cervical canal. U/S showed a fundal myoma 3x2.5 cm.

- **What are different types of polyps? management?**

Case 7 (slide)

A 37 years old MP woman comes to the hospital complaining of severe irregular bleeding, pelvic examination reveals bulky uterus (symmetrically enlarged) and a solid right ovarian tumor. Fractional D&C reveals endometrial hyperplasia

- **What are the possibilities of origin of the ovarian tumor?**
- **How to investigate such a mass?**
- **Enumerate the intra-operative criteria of ovarian malignancy?**
- **Outline the ttt of this case if the ovarian tumor proves to be 1- Benign 2- Malignant (stage I)**

Case 8

A 22 year old parous woman complains of a 3 month history of weight loss, nervousness, palpitations and sweating. She denies a history of thyroid disease and is not taking any weight loss medications. She denies abdominal pain or N&V. On examination BPr 110/60, pulse 110 bpm, and she is afebrile. Her thyroid gland is normal to palpation. She doesn't have proptosis or lid-lag. Her abdomen is non-tender and has normal bowel sounds. Her uterus is normal in size. A mobile, non-tender 9-cm mass is palpated on the right side of the pelvis which is not mobile on moving the cervix

- **What is the most likely diagnosis? management?**

Case 9

A 42 yr old parous woman has noticed increasing hair growth on her face and abdomen over the past 8 months. She denies use of steroid medications, weight change, or a family history of hirsutism. Her menses previously have been monthly and now occur every 35-70 days. On examination her thyroid is normal to palpation. She has excess facial hair and male pattern hair on her abdomen, otherwise abd is free. She has presented to the emergency room with acute retention of urine. Upon catheterization clitromegaly is noticed. Vaginal examination revealed a mass in the utero-vesical pouch.

- **What is the most likely diagnosis? management?**

Case 10 (slides)

A 64 years old para 2-0-1-2 complains of increased abdominal girth and diffuse lower abdominal discomfort for 6 wks. She has noted fullness in the upper abdomen, and in the last 2 wks has developed mild shortness of breath. She is menopausal since she was 50 years old and her past & family history are unremarkable

On examination: she is found pale, with BPr 110/70 mmhg, pulse 88 b/m, RR 28 /m. examination of the lung discloses diminished breath sounds and dullness in the left lung field. Abdomen is distended with prominent fluid wave & shifting dullness.

On bimanual & rectovaginal examination there was 15 x 10 cm irregular nodular mass fixed to the right pelvic wall & extending downwards to the Cul-de-sac. There is nodularity in the Douglas pouch but uterus couldn't be felt.

Investigations:

- Chest x-ray proves left pleural effusion
- Cytology of this fluid proved malignant
- IVP is normal, Barium enema shows displacement of the recto-sigmoid by a pelvic mass
- Paracentesis removed 6000 cc of straw colored ascetic fluid that revealed +ve for malignant cells

- **What is the most probable diagnosis**
- **What is the stage of this disease / management?**
- **What is the DD of masses in D.pouch**

1. **Uterine** ➟ RVF (the most common), posterior wall fibroid
2. **Tubal** ➟ Ectopic pregnancy (hydrosalpinx / hematosalpinx / pyosalpinx)
3. **Ovarian** ➟ Masses (neoplastic or non-neoplastic)
4. **Douglas Pouch** ➟ pelvic hematocele, pelvic abscess
   . Nodules → Endometriosis , T.B., B. , Malignancy
5. **Urinary tract** ➟ ectopic kidney

Case 11

An 22-yesr old girl presents with urinary frequency. On exam she is found to have a lower abdominal mass. U/S shows 7 cm left ovarian mass with mixed echogenicity. CT confirms the findings with fatty content of the cyst, but no other pathology is seen. CA125 and carcinoemberyonic artigens are normal. Two days after vigorous abdominal examination, the patient suffered from acute abd. pain with marked abdominal rigidity. Temp was 37.8, pulse 100

- **What is the diagnosis? Management?**

Case 12

A 28 years old housewife with 2 children was referred to the gynecology department due to a vulval swelling. Although this swelling was present for 4 years, however it was painful only 3 days ago. The patient was found feverish and the swelling was tender.

- **What is your provisional diagnosis**
- **How to treat such condition?**
- **What are the causes of vulval swellings**
  1. Congenital ➟ dermoid cyst (may be acquired: implantation)
  2. Traumatic ➟ hematoma (direct / surgical / obstetric)
  3. Inflammatory ➟ Bartholin gland (infection / cyst / tumor)
  4. Neoplastic ➟ Benign / Malignant
  5. Vascular ➟ Varicose veins, Edema, Elephantiasis
  6. Other swellings which may appear at the vulva
     - *Inguinal hernia*
     - *Uterine or vaginal prolapse / inversion*
     - *Tumors & polyps protruding from vulva*
     - *Urethra: urethral caruncle, diverticulum*

Case 13

An 80 years old lady was referred to the gynecology clinic complaining of vulvar pruritis, soreness & swelling for more than 2 months. She was also complaining of vaginal discharge and thought that this is the cause of her condition.

General examination was well, abdominal examination is free. Vaginal examination revealed whitish coloration of the labia minora. Sometimes the skin is thin but in other places it is thickened. There were signs of recent scratching but no signs of ulceration. She had a small rectocele and minimal cystocele. There was no obvious stress incontinence upon cough.

- **What is the condition the patient suffers from**
- **What investigations would you perform to confirm such condition**
  - Search for etiology ⇨ vaginal swabs for candidiasis, GTT
  - Exclude malignancy ⇨ colposcopy + Toluidine blue + multiple biopsy
- **Classify the various appearances which this type of lesion can have**
  - Hypertrophic (sq. cell hyperplasia) } may be
  - Atrophic (lichen sclerosus) } mixed
- **What is the main treatment?**

1- This cervix (star) is discovered at 20 wks preg, best ttt is

a- Cryo-coagulation
b- Laser coagulation
c- Diathermy
d- Cone biopsy
e- None of the above

2- That condition in the cervix, the true statement is

a- Normally found in pregnancy
b- Leads to lumbar backache
c- Should be biopsied
d- Best treated by cone biopsy
e- May lead to infertility

3- Regarding torsion of an ovarian cyst all are true except

1- Laparotomy must be done
2- Untwist of the cyst must be done
3- Predisposing factors includes sudden change in posture
4- May occur immediately after labor
5- May occur in dermoid cyst

4- As regards spread of epithelial ovarian cancers (Tru-Exc):

1- Spread to paraortic LN put patient in stage IIIc
2- Border line tumors may metastasize but don't invade adjacent tissues
3- It spreads via blood is early
4- Spread to Douglas pouch put patient in stage IIb
5- Trans-coelomic metastasis is a common finding at laparotomy

5- All the following regarding ovarian carcinoma are true except

1- Advanced disease is seen in > 50%
2- Survival is not related to the residual tumor postoperatively
3- Related to hereditary non-polyposis colorectal carcinoma
4- Staging depends on exploration
5- Usually present by GIT upset

6- 66 years old, presented with large pelvi-abd swelling. On surgery bilateral ov. masses, pelvic nodules, ascites were seen (Tru- Exc)

1- Mostly will be malignant
2- Might be Krukenberg
3- If malignant is considered stage II C
4- Lymphadenectomy is not essential
5- The overall 5 year survival is 30%

7- An U/S have shown multiple cysts, the smallest is 2 cm, (Tru-Exc):

1- It may occur due to chronic anovulation
2- It may be due to PCO
3- There may be a risk of associating endometrial hyperplasia
4- Laparoscopy may be done
5- Doppler differentiates benign from malignant tumors

Cervical cancer

Write short notes / essay on

- Discuss diagnosis of preclinical carcinoma of the genital tract
- Methods of early diagnosis of genital malignancy
- CIN (risk factors, prophylaxis, C/P, diagnosis & ttt
- Screening methods for cancer cervix
- Early detection & management of preclinical cervical cancer
- Diagnosis of early cancer cervix
- Early diagnosis of cervical carcinoma
- Pap smear
- The clinical presentations of cancer cervix?
- Differential diagnosis of cervical carcinoma
- Differential diagnosis of suspicious cervical ulcer
- Cervical erosions
- Management of carcinoma in situ of cervix
- Definition of stage I cancer cervix
- C/P and management of cancer cervix

Enumerate

- Methods of early detection of genital malignancy (name five)
- Diagnostic features of CIN

Ovarian tumors

Write short essay / notes on

- C/P and complications of simple cysts ovarian tumors
- Complications & ttt of ovarian cysts
- Possible complications of medium sized ovarian swelling?
- Signs & symptoms of twisted ovarian cyst?
- Dermoid cyst (benign cystic teratoma) of the ovary
- Diagnosis of ovarian tumors
- Clinical features of malignant changes in ovarian tumors
- Complications & ttt of ovarian tumors
- C/P, diagnosis & management of ovarian carcinoma
- Outline the treatment of this case if ovarian tumor proves to be:
  A] benign..... B] malignant
- Pathology of vulvar ulcers

Enumerate

- Classification of germ cell tumors

❸

- PROLAPSE

- SUI

- FISTULA

PROLAPSE SHEET

❖ Personal history

- Address → damp area chest disease
- Occupation → heavy weight lifting
- Special habits → smoking

❖ C/O ⇨ swelling protruding from the vagina for ….. duration

❖ HPI…….swelling, pain, congestive symptoms, urinary, rectal……

- The condition started 2 years ago (**onset**) when the patient discovered accidentally a small swelling protruding from the vagina during vaginal douching. This swelling disappears during sleep & only appears after repeated attacks of cough & after long standing
- There was associating whitish vaginal **discharge** which was relieved by certain vaginal suppositories. The patient noticed gradual increase of this swelling (**course**) and started to be associated with dragging lower abdominal **pain** which was relieved by rest & analgesics. There was associating **constipation** and the patient used to take rectal laxatives
- Three months ago, the patient complained from **dyspareunia** and there were 2 attacks of postcoital bleeding. Few weeks later the patient was in need to reposit the swelling by her finger in order to complete her defecation
- In the last 6 months, the patient experienced more heavy **menstruation** as she changed more than 4 napkins per day but they occur at regular pattern
- There were no associated **urinary** symptoms as frequency, dysuria, incontinence
- There were no associated symptoms suggestive of chest disease as

❖ Obstetric history in detail ✓✓✓

❖ Past history

- Surgery (recurrence
- Medical ascites, liver increasing intrabdominal pressure, GOAD

❖ Diagnosis

- Name, age, parity
- Mass protruding from vagina
- Most probably prolapse (± recurrent)
- Associated with …..SUI, trophic ulcer

Doriah Ezz-El-Dawllah Sharaf El-Dein, 36 years, P2+0, with genital prolapse For further evaluation

Personal history:

- Name : *Doriah Ezz-El-Dawllah Sharaf El-Dein*
- Age : 36 years old
- Residence : 12 el-Batal Abd-Alziz, Mohandeseen
- Marital status : Married since 1994
- Parity : having 2 living boys , youngest is 5 years old
- Occupation : House-wife.
- Special habits : No special habits of medical importance.

Don't take history like that, please one paragraph, good fluent English, don't pause, try to recite from memory & not from a dirty paper

Complaint:

- Something protruding from the vulva 4 months ago. (*Something or swelling?....Vulva or vagina?*)

Menstrual history:

- The menarche was at the age of 13 years
- The cycles were regular, each lasting for 4 days, and the cycle length is 28 days associated with premenstrual mastalgia.
- L.M.P.: 12 / 10 / 2010
  - Note that all our operations are better done *post-menstrual*
  - Note that there may be associating *congestive dysmenorrhea*

Obstetric history:

- P_{2+0} , 2 living boys
- The patient delivered twice, the first was on May, 1995 & the second was on October, 1999. Both were attended by a Daiah at home, and both ended by giving birth to a living boy of average weight. There were no antepartum or postpartum complications & both babies were breast fed.

Contraceptive history:

- She used intrauterine contraceptive device for few months between the 1st & the 2nd child. It was removed 3 years ago to allow conception
- The last method used was combined oral contraceptives & are still used till now.

Past history: The patient is asthmatic on clinil

Family history: - 2nd degree consanguinity.
- She has a twin sister

History of present illness:

- The condition started 1 year ago when the patient noticed heaviness & sense of dragging **pain ❶** lower in her lower abdomen *(the story from the beginning i.e. 1 year ago)*. This pain was not radiating to her lower limbs or the back. The condition was controllable at first by some oral analgesics, but few months later she started to complain also from low backache *(analysis of pain)*. She sought medical advice, & was given certain vaginal antibiotic suppository for a cervical ulcer.
- There was associating vaginal **discharge ❷** of moderate amount, sometimes curdy, but it didn't have any specific odor. One month later, she has undergone cauterization for that ulcer *(the patient may talk too much about her discharge……please limit your analysis to amount, odor, color, itchy or not & medications received…..be ready for:- Candida, Trichomonas, bact. vaginosis)*.
- Four months ago, the patient noticed sense of fullness in her vagina. She started to complain also from dysparuenia. Gradually she noticed appearance of a **swelling ❸** from her vulva especially on straining especially after long standing periods. This swelling disappeared after sleeping & rest *(course)*. There were no other associating swellings in her abdomen or rest of the body *(analysis)*.
- There was no associating vaginal bleeding **❹** *(the rest of the main 4 gynecological complaints* …….**Pain** …**Bleeding** ….**Swelling** ……**Discharge** *must be mentioned even if -ve)*
- One month ago, the patient experienced difficulty in **micturition** with sense of incomplete act. She sought medical advice, a urine analysis was done & antibiotic was given accordingly. There were no associated symptoms suggestive of **stress urinary incontinence** ✓✓ *(as loss of urine upon cough)* or pyelonephritis *(as fever, loin pain, dysparuenia)*.
- There were no associating difficulty in **defecation** or any other rectal or GIT symptoms *(these symptoms may suggest it is only cystocele)*

- There were no symptoms suggestive of chest troubles, abdominal swellings, or any other troubles on systemic review *(try to pick up a ppt factor)*. There were no associated hernias, varicose veins *(suggestive of generalized weakness of connective tissues)*

- She's admitted in hospital 3 days ago & she's prepared for surgery on next Thursday.

- **What is the most probable type of prolapse? Why?** Cystocele, as the main associating symptoms are urinary & not rectal.
- **Is this sure diagnosis?** No, examination must be done in the lithotomy position to determine the exact site.....and if cystocele is small, inspection may be repeated in the standing position after squatting or coughing for a while
- **What are other swellings which may protrude from the vagina?**
  - *Anterior vaginal wall* → cystocele, Gartner cyst, bladder diverticulum
  - *Posterior vaginal wall* → rectocele, enterocele, dermoid cyst
  - *Uterus* → uterine prolapse, uterine inversion, polyps
- **How to differentiate cystocele from urethrocele?** By inspecting the site:
  - *Upper ¾* → cystocele (between bladder sulcus & tr vaginal sulcus)
  - *Lower ¼* → urethrocele (between tr vag sulcus & submeatal sulcus)
- **What is the value of cusco speculum examination**
  - *To see* → ulcers
  - *To take* → a swab for infections
- **What are the risk factors for cystocele in this patient**
  - *Pdf* → obstetric trauma due to (home deliveries + Daiah)
  - *Ppf* → asthmatic (increase abdominal pressure)
- **What was that whitish discharge? How to treat it?** Candida:
  - *Local* → mycostatin (nystatin).....or.....miconazole (daktarin)
  - *Oral* → . Fluconazol (Diflucan) 150 mg once
    . Itraconazole (Sporanox) 1gm once
- **Why you asked about SUI**...common association, they have similar etiology
- **How to treat SUI in the same setting?** Kelly's suture
- **How you will treat cystocele?** Anterior colporrhaphy

What are the other alternatives to surgery

- *Behavioral changes* → stopping smoking & weight loss
- *Estrogen* → improves skin & muscle tone quality → ↓ symptoms
- *Physiotherapy (Kegel's)* exercises
- *Vaginal "ring" pessary* e.g. Smith-Hodge

- **If you had also a rectocele, which repair will you start with?** Cystocele (as it is deeper in the vagina). **What is the name of this operation?** Classical repair
- **What is the most important preoperative investigations?** Hb level
- **Would the patient deliver vaginal or CS?**
  - *VD is possible* → generous episiotomy ± prophylactic forceps...BUT
  - *CS is preferable* → by many .

Nazek Hanem El-Sharbatly,40 years, Para 4, recurrent prolapse mostly CYSTO-RECTOCELE for CLASSICAL REPAIR

Complaint: A *recurrent* swelling protruding from the vulva for the past 3 m

Menstrual history:

- She had her menarche at the age of 12 years. Since then, she used to have regular cycles at 28 days intervals with 5 days duration. She changes 2–3 napkins /day (average menstrual flow)
- There is associated symptoms suggestive of congestive dysmenorrhea as heaviness & lower abdominal pain a week before the cycle begins which is relieved 3–4 days after the menses ends
- Her last menstrual period was on 4-10-2010

Past medical & surgical history:

- A vaginal operation was done at El-Matarya hospital (*very important to mention name of the hospital*) to correct a similar condition 2 years ago

History of present illness:

- The condition started 3 months ago (**onset**), when the patient noticed gradual protrusion of a mass ❶ from the vulva. The condition was slowly progressive (**course**) as it increases more on straining & coughing and disappears on sleeping back or lying down
- It was **associated** with low backache ❷ that is not relieved by analgesics. She also complained from dysparuenia & sexual dys-satisfaction *(the real cause for seeking treatment)*
- There was associating discharge ❸, whitish in color but not offensive, which was relieved after taking some local vaginal suppositories (*mostly candida*). Also, there is excess of her normal secretions especially pre-menstrual (*leucorrhea*). However, there was no associating bleeding ❹
- There was frequency of **micturition** with slight dysurea. Urine analysis was done & the patient received some antibiotics which relieved the condition. Later on, the patient had to reduce the swelling with her fingers to complete her act of micturition. However, there is no stress incontinence, no loin pain.
- There were also symptoms suggestive of **rectal** problems as the patient reposits the swelling by her finger in order to complete defecation
- She has a chronic GOAD and the patient is not on regular therapy. However, other system review revealed no history of chronic constipation, ascites or abdominal swellings

Oral Questions

❖ **What is your diagnosis? Please state it right:** Nazek Hanem El-Sharbatly, 40 years, Para 4, recurrent prolapse mostly cysto-rectocele for classical repair

❖ **What are the complications of such surgery?**

- *Anesthesia*
- *Hge* (1^{ry}–operative– .....Reactionary–24 hr–.....2^{ry}–infection–)
- *Infection*
- *Injury* → retention of urine ✓, bladder / rectal injury
- *Later* on → fibrosis & dyspareunia

❖ **What is the cause of recurrence?** chronic generalized obstructive air-way disease & the patient is not on regular therapy

❖ **How to avoid such recurrence**

1. Preoperative
   - BAD preparation e.g. br. asthma or preoperative infection
   - BAD timing e.g. pre-menstrual
   - *Missing* diagnosing congenital weakness
2. Operative
   - BAD choice of operation
   - BAD technique of operation e.g. poor dissection & haemostasis
   - *Missing* an operation e.g. enterocele, elongated cervix
3. Postoperative
   - BAD care (infection & haemorrhage)
   - BAD spacing & management of labor
   - *Missing* ttt of the ppf e.g. chronic cough

❖ **What are the other types of displacements?....6**

Anterior	Acute AVF	Posterior	RVF (20%)
Upward	Pregnancy	Downward	Prolapse
Left lateral	Levo-rotation	Right lateral	Dextro-rotation

❖ **What are the types of dyspareunia?**

- *Superficial* → vulva, vagina, urethra (pain during penetration)...infection
- *Deep* → deep structures (after complete penetration).....EØ, PID

❖ **What are the causes of dyspareunia?**

- *Vulva, vagina & cx* → inflammation, tumors, vaginismus (psychological)
- *Uterus* → fixed RVF, parametritis
- *Tubes* → PID
- *Ovaries* → prolapse, swellings
- *Douglas pouch* → endometriosis, pelvic abscess, hematocele
- *Rectum* → fissures, piles

Nadia Tawfeek El-Dikn, 55 years, P6+0, with genital prolapse & SUI for evaluation

Complaint: something protruding from the vulva 4 years ago

History of present illness:

- Condition started 4 yeas ago when she noticed something protruding from vagina. This swelling ❶ was small at first & disappeared by lying down. Later on it increased during coughing or walking for a long time. There were no associating swellings in other parts of body
- There was associating sense of lower abdominal ❷ heaviness & backache for which the patient took no medications.
- There was also associating ❸ discharge which is greyish in color & having offensive odor for which the patient took no medications.
- Three months ago, the patient noticed gradual enlargement of this swelling which became irreducible even after lying down. She tries to reposit it by her finger but it recurs again. Associating dragging pain & sense of fullness in her vagina were also increased.
- She also started to complain from aparuenia (no intercourse at all).
- There was associating leakage of urine which occurred only during cough (SUI). Desire for micturition is still present (*i.e. it is not a fistula leading to 24 hour incontinence*). There were no symptoms suggestive of urgency (*thus excluding detrusor instability*).There were no symptoms suggestive of UTI as fever, burning or loin pain.
- There were no symptoms suggestive of rectal problems such as dyschazia, constipation
- Also there was no associating vaginal ❹ bleeding & on review of all other body system it was irrelevant
- She's admitted in hospital the last week & she was told that removal of the uterus vaginally will be performed

Oral Questions

- **What is your diagnosis?** Nadia Tawfeek El-Dikn, 55 years, P_{6+0}, with genital prolapse mostly *uterine* & SUI for further evaluation
- **How did you knew it is a uterine prolapse?** as the patient stated she will do hysterectomy, which is the ttt of uterine prolapse at that age
- **Is abd. or vag. hysterectomy more easier?** vaginal route
- **How to avoid vault prolapse during hysterectomy?** by ligating the Mackenrodt ligament to the vault
- **How to differentiate 2nd from 3rd degree uterine prolapse?** if fingers could be approximated above the swelling → 3rd degree

- **What is the alternative if the patient doesn't want to remove the uterus?** *Sling* (abd.) better than *Fothergill's* (vag.)
- **What is the main complication of sling operation?**
  - *Intestinal obstruction* → tight sling around the sigmoid
  - *Injury* → *ureteric or vascular* (iliacs & median sacral)
  - *Pain* → *psoas spasm* & pain in upper part of left thigh
- **What is the alternative if the patient is not fit for surgery?**
  - *Estrogen* → improves muscle tone quality
  - *Physiotherapy* → Kegel's exercises
  - *Vaginal pessary* → Smith-Hodge or Cup & stem
  - *Le-Fort (partial colpocleiesis)* → done under local anesthesia
- **What is the difference between SUI & DI ?**

	SUI	**DI**
Def.	-Involuntary loss of urine during straining, coughing or sneezing -Due to ↑ed intra-abdominal pr -In absence of any detrusor activity	-Uninhibited detrusor contractions leading to:- -involuntary loss of urine
Etiology	Difficult deliveries → injury to: - urethral sphincter - levator ani	- Local bladder irritation (cystitis) - May be neurogenic
C/P	Immediate loss of a small *spurt* of urine upon cough. May be 1- mild 2- moderate 3- severe (with walking)	Urgency → strong desire which can't be resisted → *long* gush (stream) of urine < reaching convenient place
Investig.	- Urodynamics (cystometry) ....shows the rise of intraabd. pr. over the urethral pr. - Urine analysis (a must) ....to exclude infections	- Urodynamics (shows irregular detrusor contractions occurring after a while of provocation)
TTT	*Surgical* 1- Vaginal:- . Kelly's suture . TVT 2- Abdominal:- . Burch colposuspension . Laparoscopic sling	*Medical* 1- Anticholinergics (Detrol) → muscarinic antagonist 2- Tri-cyclic antidepressants → steprine 3- Muscle relaxants → oxybutinin 4- Calcium ch.blocker→ epilat

Case I

A 48 year-old G3 P3 woman complains for a year of a history of loss of urine 4-5 times each day, typically occurring 2-3 seconds after coughing, sneezing or lifting. In addition, she notes some dysuria & these events cause her embarrassment & interfere with her daily activities. The patient is otherwise in good health.

A urine culture performed one month previously was -ve. On examination, she is slightly obese, her BPr. 130 /80, heart rate 80 bpm and temp. 37. Abdominal examination reveals no masses or tenderness. A mid-stream urinalysis is unremarkable

- **What is the possible diagnosis**
- **What are the signs you could elicit clinically**
  - . The cough stress test (ask the patient to cough & observe urine loss)
  - . Bonney elevation test (diagnoses SUI d.t. cystocele)
  - . Yousef test (unmasks hidden SUI d.t. a large cystocele)
  - . Pad test (the patient wears a pad which is re-weighted after a while)
  - . Q-tip test (observe movement of a cotton applicator in the urethra)
- **How to confirm this diagnosis ....** *Urodynamics*
  - . Cystometry (measure ↑ intra-vesical pr. while filling bladder by H_2O)
  - . Urethral pressure (measure ↑ intra-urethral pressure along the urethra)
- **What is the most important pre-operative investigation?** C&S
- **What is your therapy....surgery**
  - ➠ *Vaginal operations*
    - Kelly's operation (sutures placed below urethra to support it)
      - . Adv → the easiest procedure, also corrects cystocele
      - . Disadv → high failure rate 50%
    - TVT (tension free vaginal tape)
      - . A tape is suspended below urethra
      - . Tension is adjusted by pulling needles up while straining
      - . Adv → simple & rapid, high success rate (90%)
  - ➠ *Abdominal operations*
    - Burch colposuspension ✓
      - . From bladder neck *sides* to iliopectineal ligaments
      - . Adv → best success rate (90%)
    - MMK (Marshal-Marchetti-Krantz) ✗
      - . From vaginal fascia on BN *sides* to periosteum of back of SP
      - . Disadv → osteitis pubis (5%)
- **What is the commonest post-operative complication?**
  - *Retention* of urine due to over-correction
  - *Recurrence* of symptoms

Case 2

A 33 years old P 3+2 has come to your office with continuous dribbling of urine from the vagina. Her last 2 deliveries were by CS. In the last delivery, she was allowed to deliver vaginally, but rupture uterus occurred. The rupture was repaired but the patient claims that she is sometimes continent & sometimes not. On examination, the vulva was found to be excoriated with whitish crusts

- **What is the type of incontinence present**
- **Define incontinence:** involuntary loss of urine on ↑ intra-abdominal pressure (as straining, coughing, sneezing) –*when intra-vesical pressure exceeds the intra-urethral pressure*– in absence of any detrusor activity
- **What are the types of incontinence?**
  - *Extra-urethral incontinence* ⇨ fistula
  - *Trans-urethral incontinence*
    - . Retention overflow (false incontinence)
    - . Nocturnal (enuresis) incontinence
    - . Stress incontinence ✓ (60%)
    - . Urgency incontinence = Detrusor instability (20-30%)
- **What is the main protection against involuntary urine loss**
  - *Factors maintaining low intra-vesical pressure*
    - . Passive factors ⇨ bladder is distensible (compliant)
    - . Active factors ⇨ bladder doesn't contract in response to stretch
  - *Factors increasing the intra-urethral pressure*
    - . Mucous membrane → forms good coaptation
    - . Urethral sphincters → continuous tone
    - . Intra-abdominal situation of both bladder & upper part of urethra
- **What are the conditions that should be fulfilled if a patient with CS is allowed to deliver vaginally**
  - One LSCS (Not USCS)
  - No permanent indication → e.g. contracted pelvis
  - No associated indication → e.g. malpresentation or placenta previa
  - No tenderness over scar → also scar doesn't look ugly
  - No previous op. difficulty → no bl. transfusion, bladder injury, p.sepsis
- **What are the possible conditions that increase such injury**
  - Congenital malformations → of the genital or urinary tract
  - Involvement in adhesions → infection, malignancy, endometriosis
  - Distorted anatomy → cervical fibroid, broad lig. swelling, prolapse
  - Rapid blind clamping → to stop bleeding in massive intraoperative hge.

Case 3

A30 year-old woman is presented to you 8 weeks after giving birth, and seeks medical help because of urine leakage. She explains that she labored over 3 days without medical assistance, and the baby was eventually stillborn. For the past 4 weeks she has been leaking urine continuously.

- **How to establish your diagnosis?**

Case 4

A 55 year postmenopausal lady who is Para 4+2 noticed gradually increasing swelling protruding from her vulva. She also complains of dragging lower abdominal pain. Recently she started to complain of painless loss of urine upon cough.

- **What is the DD**
- **What are the possible causes**

Case 5

A fifty years old housewife had noticed a mass protruding from the vulva of increasing size from 2 years. She has local soreness & associated with a low abdominal dragging sensation. Menstruation had ceased 11 years earlier but for the past 3 months she had been troubled by an intermittent blood stained vaginal discharge. She had no intercourse for some months because of the discomfort it caused.

ON vulval inspection, there were moderate atrophic changes and when the patient was asked to bear down the cervix became visible at the introitus, its surface was ulcerated. When she stood up, the vagina become everted

- **What is the diagnosis**
- **What other symptoms may associate this condition**
- **What factors predispose to this condition**
- **What ttt you recommend including the preoperative investigations & preparation**

Case 6

A62-year-old lady attends the clinic with a mass descending per vagina. She underwent a total abdominal hysterectomy & BSO 10 years ago for severe menorrhagia.

- **What is the possible diagnosis**
- **How to treat**

1- All these structures share in the formation of perineal body EXCEPT

a- Levator ani
b- Transverse perineal ms
c- Iscio-cavernosus
d- Bulbo-spongiosus
e- Anal sphincter

2-1 Factors marinating the uterus in its normal position (All-Exc)

a- Apposition of pelvic organs
b- Uterosacral ligament
c- Peritoneal reflections
d- Ovarian ligament
e- Levator ani

2-2 The main support of the uterus DON'T include

a- Round ligament
b- Uterosacral ligament
c- Pubocervical ligament
d- Cardinal ligament
e- Levator ani

3- The INCORRECT statement is

a- Urethrocele lies between 1 and 2
b- Cystocele lies between 2 and 3
c- Urethro-cystocele lies between 1 and 3
d- 1 + 2 + 3 are best visualized by anterior vag speculum
e- Prolapse is more common in multigravida

4- The following statements about this arrow are true EXCEPT

a- Have a major role in uterine support
b- Both uterine artery and ureter pass within it
c- Have a major role in marinating AVF position
d- Originates from the White line in the lateral pelvic floor
e- Forms the base of the broad ligament

5-1 About pelvic ligaments (Tru-Exc):-

a- Uterosacral ligaments are inserted into the mid-sacral piece
b- Ovarian ligament is one of the true ligaments of uterus
c- Round ligaments is derived from gubernaculum
d- They may be corporea or cervical
e- Ureters pass within the cardinal ligaments

5-2 About pelvic ligaments (Tru-Exc):-

a- A pair of uterosacral ligaments surround the rectum
b- Ovarian ligament contain lymphatics
c- Round ligament raises a ridge in the broad ligament
d- Rupture rudimentary horn is lateral to round ligament
e- Round ligament is continuous with the ovarian lig at the cornu

6- About that ligament, all is true except:

a- It is inserted at the mid-sacral pieces
b- It leads to backache in active stage of labor
c- The ureter passes through it
d- The rectum passes through it
e- It may be used as a sling in uterine prolapse

7- All the following about levator ani

a- Covered by both superior & inferior pelvic fascia
b- Have a major role in labor
c- Supplied only by pudendal nerve
d- Helps to increase intrabdominal pressure
e- Shares in the formation of perineal body

8- All the following about normal uterine position are true except

a- The cervix is bent forward on the vagina by 90°
b- The body is flexed on the cervix forward by 160-170°
c- The vagina is 45-60° rotated forwards
d- The cervix lies above ischial spine
e- RVF is present normally in 20% of patients

9- As regards cystocele the followings are true except:

a- It is prolapse of the bladder in upper part of anterior vaginal wall.
b- Menopause is a risk factor for the development of cystocele.
c- It is the main cause of stress urinary incontinence.
d- It may lead to UTI.
e- It is uncommon in nulliparous women.

10- The incorrect statement for cystocele:

a- It is usually associated with stress incontinence.
b- It occurs between the transverse vaginal and the bladder sulcus
c- As the early stages might present with frequency of micturition.
d- It may be surgically corrected by classical repair
e- Is best treated with ring pessary.

11- Which is the correct statement for rectocele?

a- Usually associated with acute local pain
b- More common in nulliparas
c- Not related to instrumental delivery
d- Not related to postmenopausal changes
e- May include sacral backache

12- Pdf of such condition include all the following except

a- Congenital weakness of supporting ligaments
b- Postmenopausal atrophy
c- Injury during childbirth
d- Cervical polyps
e- Ovarian tumors

13- The incorrect statement regarding 2nd degree uterine prolapse:

a- Is diagnosed when the cervix protrudes through the vulval orifice.
b- Is also known as complete procidentia.
c- Causes sacral backache.
d- May precede vaginal wall prolapse.
e- May be associated with menorrhagia.

14- Etiological factors of uterine prolapse include

a- Nulliparity
b- Postnatal Bed rest
c- Crede's method
d- First degree perineal tears
e- Acquired myopathies

15- As regard enterocele, the following is correct

a- It is a prolapse of the rectum
b- It may occur following colpo-suspension
c- It may resolve spontaneously
d- Confirmation of diagnosis by barium enema
e- It is a common cause of stress urinary incontinence

16- As regard anterior colporrhaphy

a- May cause transient postoperative urine retention
b- It can be combined with vaginal hysterectomy
c- It is done first in classical repair
d- Should be postponed till completion of child-bearing
e- It is better postponed in presence of urge incontinence

17- The Manchester operation do not include

a- Amputation of the cervix
b- Posterior colpoperineorrhaphy
c- Anterior colporrhaphy
d- Dilatation of the cervical canal
e- Colpo-suspension

18- As regard vault prolapse all are true except

a- It is more common after total hysterectomy compared to non-total
b- It may be avoided by suturing vault to Mcknrodt's lig during hysterectomy
c- It is more predisposed to in obese patients
d- It could be corrected by sacro-spinous fixation
e- It could br corrected by cervico-sacropexy

19- The true statement about retroversion of the uterus is that it:

a- Occurs in 20% of normal women.
b- It is a common cause of infertility.
c- Should be corrected with a Hodge pessary in early pregnancy.
d- May be corrected by a ventro-fixation operation.
e- Is caused by heavy lifting.

Prolapse

Write short notes / essay on

- Supports of the uterus
- Types of genital prolapse
- The etiology and/or prevention of genital prolapse
- Clinical picture of female genital prolapse
- Treatment of genital prolapse
- Uterine / utero-vaginal prolapse
- Symptoms of uterine / genital prolapse
- Causes & treatment of uterine prolapse
- Types & complications of utero-vaginal prolapse
- Treatment of 2nd degree uterine prolapse

Enumerate

- Types of female genital prolapse
- Types & ttt of female genital prolapse
- The degree & etiology of genital prolapse

Fistula

Write short notes / essay on

- Causes of urinary fistula in women
- Etiology / diagnosis / ttt of vesico-vaginal fistula
- Complete perineal tear
- Old complete perineal tear

Urinary Incontinence

Write short notes / essay on

- Clinical picture of true urinary incontinence
- Investigations of true urinary incontinence

Enumerate

- Types of urinary incontinence
- Causes of urinary incontinence in females (five causes)

4

OPERATIVE GYNECOLOGY

Write short notes / essay on

- Indications of D&C (twice)
- Complications of D&C (twice)
- Management of uterine perforation during D&C
- Laparoscopy
- Causes of acute abdomen in gyna
- Indications / timing / contraindications of HSG
- Pap smear
- Vaginal smear

Enumerate

- Indications & pre-requisites for Pap smear
- Contraindications & complications of HSG

Others

- Indications & complications of hysterectomy
- Enumerate complications of laparoscopy
- Role in infertility
    - Ultrasound
    - Hysteroscopy
    - Laparoscopy
    - HSG

⑤

- AMENORRHEA

- ANOVULATION

- PCO

Definition

1ry amenorrhea is

Absence of menstruation in a patient who has never menstruated before, either at: 14 years → without 2ry sexual characters,
16 years → with 2ry sexual characters

Types

A- False amenorrhea (Cryptomenorrhea)

- **Etiology (outflow tract obstruction)**
  - Imperforate hymen ✓ (the commonest cause)
  - Transverse vaginal septum / vaginal aplasia
  - Congenital cervical atresia
- **Symptoms (starting at puberty)**
  - 1ry amenorrhea → cryptomenorrhea (false amenorrhea)
  - Cyclic lower abdominal pain
  - Abdominal swelling (mainly hematocolpos)
  - Pressure manifestations: as dysuria & retention of urine
- **Signs**
  - Abd. ⇨ tense cystic pelviabdominal swelling
  - Vag. ⇨ bluish bulging hymen
  - P/R✓⇨ distended vagina (continuous with the abd. swelling)
- **Complications**

  Haematocolpos, haematometra, haematosalpinx → spillage of blood into peritoneal cavity → adhesions → infertility (∴ don't postpone!)
- **Treatment**
  - General anesthesia + catheterization
  - Cruciate incision ⊗ + excision of edges OR
    . Opening a hole in the hymen after traction from its center
  - Leave blood to drain slowly + antibiotics coverage

B- True amenorrhea

- **Hypothalamic (rare)**
  . *Frholich* ⇨ short & obese
  . *Laurance Moon Beidel* ⇨ limb deformity, MR, ret pigementosa
  . *Kallman syndrome* ⇨ anosmia
- **Pituitary (rare).....Levi-Lorain syndrome**
- **Ovarian.....Turner syndrome, Androgen insensitivity**
- **Uterine.....Mullerian agenesis**

♣ Turner syndrome

- **Clinical picture**
  - Genotype → 45 chromosomes (45xo) i.e. no Barr body
    OR Mosaic (45xo – 46xx) or (45xo – 46xy)
  - Phenotype
    . Short < 150 cm, webbed neck
    . Shield chest (widely spaced nipples + underdeveloped breasts)
    . Coarctation of aorta ¤ , cardiac & renal abnormalities
    . Cubitus vulgus (wide carrying angle)
  - External genitalia → infantile
  - Internal genitalia → streak ovaries (fibrous bands + no follicles)

- **Investigations:** ↓ E + ↑ FSH (hypergonadotrophic hypogonadism)

- **Treatment**
  1- Cyclic E&P (
     - To stimulate breasts, menstruation, prevents osteoporosis & CVD
     - Not given < 13 yrs to avoid premature closure of epiphysis
     - Growth hormone can be added to increase height (± 8cm)
  2- Oophrectomy is done only in mosaic types with Y-chromosome as risk of malignancy is → 25%: dysgerminoma
  3- The only hope in pregnancy → oocyte donation (forbidden)

♣ Testicular feminization (Androgen Insensitivity Syndrome)

- **Pathogenesis**
  X-linked recessive diseases → *absent* or *insensitive* receptors in breasts, hair follicle, vulva → no response to ANDROGENS secreted from testis (i.e. end organ insensitivity) → ∴ they develop in a feminine direction

- **Clinical picture**
  - Karyotype ⇦ 46 XY (male)
  - Phenotype ⇦ attractive female with well developed breasts (fat only – no glands) with small nipples, pale areola, pubic & axillary hair are absent
  - Internal genitalia ⇦ testis (found intra-abdominally, in a hernial sac, in groin, in labia). They secrete a hormone from sertoli cells (anti-Mullerian hormone) → no uterus, tubes
  - External genitalia ⇦ a vaginal pouch

- **Investigations**
  - Normal ♂ level testosterone (> 300 ng/dl)
  - Normal ♂ level estradiol (30 pg/ml) produced from
    . Adrenals, testis, peripheral conversion (androstenedione to estrone)
    . This small E amount is unopposed by T → breast development
  - Normal FSH, LH levels

- **Treatment**
  1- Leave the patient till 16-18 years: to allow breast development
  ↳ followed by gonadectomy (a must as → malignancy is 25%)
  ↳ followed by ERT (no need for progesterone):
  To maintain the feminine character, avoid osteoporosis, CVD
  2- For vaginal pouch → gradual dilatation or plastic surgery

✣ Mullerian agenesis

- May be present alone OR
- More commonly with absent vagina ↳
  Mayer-Rokitansky-Kuster-Hauser syndrome
- Renal (30%) & Skeletal (15%) anomalies [IVP & X-ray is a must]

- **Etiology** ⇨ congenital anomaly

- **Clinical picture**
  - Genotype……46xx
  - Phenotype……normal female
  - External genitalia……vaginal pouch
  - Internal genitalia……normal ovaries

- **Investigations** ⇨ normal E

- **Treatment**

1. Frank method → use of progressive dilators
2. Vaginoplasty →
   . McIndoe's operation: dissection bet. bladder & rectum
   . William's operation: creation of a labial pouch
3. Abdominal → colon vaginoplasty ± skin graft or amnion graft
4. Laparoscopic → Vachetti operation (gradual traction of a ball)

♀ Anovulation

Definition

Failure of ovulation, which may be classified into ❯

- **Group I** ➟ hypothalamic pituitary failure
- **Group II** ➟ hypothalamic pituitary dysfunction
- **Group III** ➟ ovarian failure

Etiology

- Physiological → prepubertal, postmenopausal, pregnancy & lactation
- General → severe malnutrition, anemia, DM, TB, exercise, stress
- Idiopathic → most frequent (functional error in the HPO axis)
- Iatrogenic → COC, androgens
- Pathological →

1- Hypothalamus

. Congenital syndromes…Frohlich…Laurence Moon Biedl…Kallmann
. Traumatic……fracture base of the skull
. Inflammatory……after meningitis or encephalitis
. Neoplastic…….tumors destroying the hypothalamus
. Others……..severe stress……anorexia or bulimia…..pseudocyesis

2- Pituitary

. Congenital syndromes… Levi-Lorain syndrome
. Traumatic……fracture base of the skull
. Inflammatory……after meningitis or encephalitis
. Neoplastic…….destructing or secretory (e.g. prolactinoma)
. Others……..empty Sella syndrome……..Sheehan's disease

3- Ovary

. Congenital……dysgenesis….testicular feminization syndrome
. Traumatic……oophrectomy (surgical, medical, irradiation)
. Inflammatory…….mumps, T.B.
. Neoplastic…….destructive or secretory tumor (⇧ E or An)
. Others
  - Polycystic ovarian disease
  - Premature ovarian failure
  - Resistant ovary syndrome
  - Hyperprolactinemia
  - Hyperandrogenism

4- Thyroid disorders
5- Adrenal disorders

Clinical picture

- **Menstrual irregularity** ⟹ amenorrhea, oligomenorrhea, DUB
- **Infertility**
- **C/P of etiology**
    1. PCO → obesity, hirsutism
    2. Hyperprolactinemia → galactorrhea
    3. Hyperandrogenism → hirsutism
    4. Other endocrine disease → thyroid (goiter, tremors)

Investigations

- **Tests for amenorrhea**
    1. PCO . U/S: necklace appearance
        . ⇧ LH, ⇩ FSH, LH/FSH ratio ≥ 3
        . ⇧ Estrogens (both E_2 & E_1) & ⇧ Androgens
        . ⇧ Insulin → hyperinsulinemia & insulin resistance
    2. Hyperprolactinemia
        . Prolactin level (normal 2-2- ng/dl)
        . CT scan brain ± visual field (adenoma)
    3. Hyperandrogenism → testosterone or DHEA-S level
    4. Other endocrine disease → thyroid (goiter, tremors)
- **Tests for ovulation**
    - ▸ Biphasic BBT
    - ▸ Vaginal cytology ⇨ progesterone effect (intermediate cells)
    - ▸ Cervical mucous ⇨ +ve Spinnbarkeit, +ve fern (estrogen effect)
      → turns -ve on day 17-21 (progesterone effect)
    - ▸ Premenstrual endometrial biopsy ⇨ lag behind menstrual dates by ≥ 2–3 days In CL insufficiency
    - ▸ Hormone assay ⇨ mid-luteal progesterone level
      >12 ng/ml → ovulation + good CL function
      < 3 ng/ml → anovulation
    - ▸ Ultrasound (serial transvaginal folliculometry)

Treatment

- **General** ⟹ correction of malnutrition, anemia, DM
- **Medical** ⟹ induction of ovulation
    - PCO…..clomid ± oral hypoglycemic
    - Hyperprolactinemia…….bromocryptine, lisuride
- **If failed medical ttt**
    - Clomid ± HCG
    - HMG ± HCG
    - GnRH analogues in pulsatile manner
- **Surgical** ⟹ ovarian drilling for PCO, surgery for virilizing ovarian tumor
- **If all failed** ⟹ **IVF**

Case 1 (slide)

A 42 year old lady complains of amenorrhea for 3 months. She also complains of easily fatigability. She also complains of pelvic & breast heaviness. Blood tests were withdrawn: she had a borderline TSH & thyroxine, prolactin 42 ng/ml, normal testosterone, LH 0.3 mIU/ml, FSH 0.4 mIU/ml.

State the most appropriate step in assessment?

1-1 All regarding LH (arrow) is correct, EXCEPT

a- It is a water soluble glycoprotein
b- Ovulation occurs 32-40 hours after its rise
c- Needs another smaller FSH rise
d- Is low in pregnant females
e- Is low in postmenopausal females

1-2 All about progesterone (star) is correct EXCEPT

a- Produced only from the corpus luteum
b- May be low in patients with recurrent abortion
c- May be given to treat dysfunctional bleeding
d- May act as a contraceptive
e- Makes cervical discharge viscid & scanty

1-3 All about progesterone are correct EXCEPT

a- It stimulates breast glandular development
b- It inhibits LH production
c- It causes persistent rise of basal body temp.
d- It causes salt and water retention
e- It causes relaxation of cardiac sphincters

1-4 Normal ovulation is associated with, (Tru-Exc):

a- LH surge
b- Increased tubal motility
c- Watery vulval sensation
d- Fall in basal body temperature
e- Appearance of fluid in Douglas pouch

2-1 As regard this hormone (arrow) (All-Exc):

a- May be used to treat infertile patients
b- May be used to diagnose menopause
c- Helps in oocyte growth and maturation
d- Causes ovulation
e- May be produced from trophoblast

2-2 As regard this hormone (star), (All-Exc):

a- Estrone is the postmenopausal estrogen
b- Is high in PCO
c- Is high in Metropathia haemorrhagica
d- Is high in Mullerian agenesis
e- Is high in pregnancy

Case 2 (slide)

A 38 year old woman complains of 7 months amenorrhea following a spontaneous abortion for which she had D&C. her medical and surgical histories are unremarkable. She experienced menarche at 11 yrs and notes her menses were between 28-31 days until recently. Her thyroid is normal to palpation, and breasts are without discharge. The abdomen is non-tender. P/V shows a norma uterus, closed normal appearing cervix with no adenexal masses. A pregnancy test is -ve. LH 6 mIU/ml, FSH 5 mIU/ml. The patient received COC for the last 3 months but there was no withdrawal bleeding.

◗ **What is the likely diagnosis?** ◗ **What is the next diagnostic test?**

◗ **All the following may lead to this condition except:**

a- Puerperal sepsis
b- Multiple submucous myomas
c- Over-curettage
d- Metroplasty
e- Tuberculosis

◗ **The least useful tool in diagnosing such condition is:**

a- Uterine sound
b- Ultrasound
c- Hysterosalpingography
d- Saline sonohysterography
e- Hysteroscopy

Case 3 (slide)

An 11-year-old girl undergoes laparotomy for appendicitis. On opening the abdomen there is noted to be a torted gangrenous ovarian cyst, for which she undergoes a unilateral oophrectomy. Further exploration show a horse-show mass with no palpable uterus or tubes. Vaginal examinat on shows a blind pouch of 3 cm length. Serum FSH, LH and E2 levels re normal

1- All the following statements are true except

a- Products 1,3,4 will form ligaments
b- Remnants of "c" may form cysts within the broad ligament
c- Bladder is only developed from the urogenital sinus
d- Mullerian ducts are also called the paramesonephric ducts
e- Lower 1/5 of the vagina is developed from the urogenital sinus

2- Regarding vaginoplasty all the following are true except

a- May be done for testicular feminization syndrome
b- May be done laparoscopic
c- Restores fecundibility
d- Bladder may be injured
e- Involves use of an amnion graft

Case 6 (slide)

A 34 year old lady who has not been married has come to the clinic with irregular menstrual cycles. She states that her periods lasts for 15 to 20 days but occur every 3 to 4 months.

She also states that she has trouble with excess hair on her face for which she needs to remove frequently. On examination she is found to be markedly over-weight and her BPr is 150/100. Local examination was not performed and U/S showed enlarged ovaries. Serum FSH 4.6 mIU/ml, serum LH 11 mIU/ml

- **What is the most likely diagnosis**
- **What are the other causes of hirsutism**
  - Increased level of serum androgen
  - Decreased production of SHBG → ↑ free testosterone
  - Local ↑ sensitivity of hair follicles
- **Would you advice the patient to reduce weight? Why?**
- **How would you manage such case**
- **If she is married, would you change your management**
- **If this patient were to remain untreated, what conditions would she be liable to develop later on**

-
-

1- As regard this lady, all are true except

a- Her condition may be familial
b- It may be due to adrenal tumor
c- Is present in PCO
d- Is present in testicular feminization syndrome
e- May be treated by spironolactone

2-1 All these statements about this U/S is correct except

a- Usually occurs in obese patients
b- Is associated with insulin resistance
c- Follicles are mainly seen subcapsular
d- Laparoscopy is essential for accurate diagnosis
e- May lead to habitual abortion

2-2 True statement about PCO

a- First line ttt is wedge resection
b- They are at decreased risk of endometrial carcinoma
c- LH is increased and FSH are decreased or normal
d- Prolactin level is normal
e- Midluteal progesterone is > 12 ng/ml

Case 7 (slide)

An 14 years girl presented to the emergency room with severe suprapubic pain & inability to micturate for 12 hours. She also felt fullness in the lower abdomen. she never menstruated, but she gave the history of periodic colic supra-pubicaly during the last 6 months

- **What is your provisional diagnosis**
- **Mention one sign & one investigation to help diagnosis**
- **What surgical management do you suggest for such cases**
- **Is there any administrative (non-medical) part in management**

1-1 All are true about such condition, except

a- Pelviabdominal swelling is mainly uterine
b- The commonest presentation is by 1^{ry} amenorrhea
c- May present by retention of urine
d- May lead to infertility if ttt is delayed
e- Needs surgical intervention

1-2 Imperforate hymen might present with the following except

a- Primary amenorrhea
b- Cyclic menstrual molimina
c- Acute retention of urine
d- Abdominal mass
e- Hypomenorrhea

2- The incorrect statement regarding this pelviabdominal swelling

a- Mainly distended vagina full with blood
b- Mainly distended uterus full with blood
c- It may present with acute retention of urine
d- Simulates an ovarian swelling
e- Is continuous with digital rectal palpation

Case 8

A 32 year old lady para 4+2 come to your office complaining of absence of her menstrual flow since her last delivery 8 months ago.

- **Discuss all likely possibilities (4)**
- **How would you reach proper diagnosis & ttt**

1) First of all → exclude pregnancy → β-HCG
2) Then determine level → Prolactin & TSH, T_3, T_4
3) if all normal → Progesterone challenge test
   - +ve bleeding → anovulation
   - -ve bleeding → E + P withdrawal test:
     - -ve bleeding → uterine cause
     - +ve bleeding → central cause: FSH, LH ± CT

Case 9 (slide)

A 15 years old girl complaining of severe dysuria with minimal dribbling of urine as well as severe lower abdominal pain for the last few days. She gave a history of almost similar attacks for the last few months with less intensity. On examination, generally the patient is anxious and is in agony with well developed 2ry sexual ccc. Lower abdomen revealed central swelling reaching the umbilicus & tender on palpation

1- All the following statements are true except

a- Incomplete canalization of the vaginal plate leads to imperforate hymen
b- Cryptomenorrhea usually presents by pelviabdominal swelling
c- Annular hymen is the commonest form
d- Failure of canalization of vaginal plate leads to transverse vag septum
e- Lower 1/5 of the vagina is present in testicular feminization syndrome

1-2 The urogenital sinus gives the following except

a- Urinary bladder
b- Skene's duct
c- Lower part of the vagina
d- The ureteric bud
e- Bartholin's gland

2- This anomaly may lead to all the following except (vaginal septum)

a- Dyspareunia
b- Twins
c- Over-riding of breach
d- Normal pregnancy
e- Associated didelphys

3- All are true about this condition (star) except (bicornuate uterus)

a- May be associated with vaginal septum
b- May be associated with horse show kidney
c- Spasmodic dysmenorrhea could occur
d- Presents by 1^{ry} amenorrhea
e- Presents by habitual abortion

4- Complications of this anomaly on HSG include the following except

a- Operative delivery
b- Malpresentation
c- Placenta accreta
d- Placenta previa
e- Abortion

5- This anomaly leads to one of these complications (unicornuate)

a- PTL
b- Ectopic
c- Cryptomenorrhea
d- Menorrhagia
e- Amenorrhea

Anovulation

Write short notes / essay on

- Symptoms / signs of ovulation
- Causes of anovulation
- Diagnosis of anovulation
- Induction of ovulation
- PCO
- The long term complications of PCO
- Hyperprolactinemia
- Management of hyperprolactinemia
- prolactin
- Causes of hirsutism

Enumerate

- Causes of anovulation
- Causes of hyperprolactinemia

Amenorrhea

Write short notes / essay on

- Causes & management of amenorrhea
- Secondary amenorrhea (causes / investigations / ttt)
- How to proceed with investigation of a case of 2ry amenorrhea
- Cryptomenorrhea
- Diagnosis of turner syndrome
- Management of 1ry amenorrhea

Enumerate

- Classification of functional hypothalamic amenorrhea

Dysmenorrhea

Write short notes / essay on

- Spasmodic dysmenorrhea
- Secondary (congestive) dysmenorrhea

Enumerate

- Methods of pain control in 1ry –spasmodic- dysmenorrhea (mention 5)

6

Infertility

&

Contraception

❶ Long acting hormonal contraception

I- Injectables

➟ **Preparation:** Depot Medroxy-progesterone acetate 150 mg IM / 3 months

➟ **Mode of action**

- Inhibition of ovulation
- Unfavorable endometrium
- Thick scanty cervical mucous
- Decrease tubal motility
- Inhibition of sperm capacitation

∴ *Reliable* as COC (>99%)

∴ *Non-contraceptive benefits*

- Endometriosis, endomet. hyperplasia or carcinoma
- Improves PMT & dysmenorrhea
- Precocious puberty, hirsutism
- Protects against PID (but not STD ¤)

➟ **Indications**

1. *Lactating* (with no ↑ in cancer breast)
2. *As there is no estrogen side effects:*
   . CVS.....Liver
   . Old .....smoker

➟ **Disadvantage & side effects**

- *Can't reverse contraception* once injection started (may take up to 9 m)
- Slight ↓ in BM density esp at young age
- *As there is Prog. effect*
  - Weight gain in some patients
  - Few metabolic effects → mild anti-insulin action, Decreased HDL-C
- *Menstrual irregularities* (most common)
  - Amenorrhea → reassure after excluding pregnancy
  - Oligomenorrhea / hypomenorrhea → reassure
  - Irregular bleeding → exclude pathology then give

1. **Take next DMPA injection before date,** or....
2. **Norethisterone oenanthate**
   ↳ Noristerat or Norigest 200 mg IM / 2 months
3. **Recently: monthly combined injectable contraception**
   ↳ **Cyclofem** (DMPA 25 mg + estradiol Cypionate 5 mg)
   ↳ **Mesygyna** (DMPA 50 mg + estradiol valerate 5 mg)

2- Subdermal Implants

➟ **Method** (Norplant)

- Six cylinders containing Levonorgestrel (36 mg / cylinder)
- Inserted SC on inner aspect of medial side of arm in a fan shaped manner
- Slow release of progestin → lasts for 5 years
- Implanon is a Single cylinder → left for 3 years ✓

➟ **Action**

- On cervical mucous → thick
- On endometrium → atrophy
- On sperms → inhibits capacitation
- To less extent → alter tubal motility & suppression of ovulation (50%)

➟ **Adv** → . Long acting (99% protection)
. May be removed when pregnancy is desired (rapidly reversible)

➟ **Disadv** → . Headache
. *Menstrual irregularities* or amenorrhea (the cause of removal)
. Difficult insertion & removal

3- Hormone releasing IUCD

➟ **Method**

* Progestasert.....38 mg
* Mirena, Levonova (levonorgesterel)..... 52 mg

➟ **Action of progesterone:**

- Atrophic endometrium
- Thick, scanty, viscid cervical mucous (prevents sperm ascent)
- Prevents sperm capacitation

➟ **Advantages**

- Reliable (failure 0.2 in Levonova)
- Non-contraceptive benefits of hormone releasing IUCD
  - Treatment of dysfunctional uterine bleeding
  - Prevention & treatment of endometrial hyperplasia
  - Protection from PID

➟ **Disadvantage**

- Expensive
- Others: perforation, expulsion, ectopic pregnancy

1) COC pills

▸ Advantages

* Contraception
  - Failure rate = 0.1 / HWY (most effective method)
  - Cheap, easy to use, not related to intercourse, rapidly reversible

* Non contraceptive benefits
  - Control of dysfunctional uterine bleeding
  - Decreased menorrhagia → decreased anemia
  + Dysmenorrhea & Premenstrual tension decreased
  + Endometriosis, fibroids, endometrial carcinoma
  + Functional ovarian cyst, ovarian carcinoma
  - Decreased PID (thick cx mucus) but doesn't protect against STD
  - Suppression of lactation & ↓ benign breast lesions

▸ Side effects & Complications

* **CNS** [P effect]
  - *Headache & migraine*
  - *Mood changes* → depression & irritability

* **CVS**
  - *E effect* → liability to thrombosis (effect on clotting factors)
  - *P effect* . Astherosclerosis & Hypertension

* **Breast** [E effect]
  - *Breast engorgement & mastalgia*
  - *Cancer breast* → little risk (esp if use > 10 yrs)

* **GIT** [E effect]
  - *Nausea & Vomiting* → esp on 1st few weeks
  - *Liver* → tendency to cholestasis, gall stones, may affect liver enz

* **Metabolism**
  - *CHO metabolism* → insulin antagonism [E + P effect]
  - *Weight gain* [salt & water retention or anabolic effect of P]

* **Menstrual**
  - *Hypomenorrhea* → usually improves menstrual control
  - *Amenorrhea* → exclude pregnancy
  - *Spotting / Breakthrough bleeding*

2) POP pills

- **Advantages: could be given for**
  1. *Lactating*
  2. *As there is no estrogen side effects:*
     - CVS / Liver.....Old / smoker
  3. *As there is min. Prog. effect (e.g. CHO, lipid metabolism, weight gain)*
     - Diabetics & hypertensive.....Obese
- **Disadvantages & side effects**
  - Higher failure rate than combined pills = 1–2 /HWY
  - Liability to ectopic pregnancy (due to effect on tubes)
  - Menstrual side effects e.g. Spotting or Irregular cycles

3) Injectables

- **Advantages: could be given for**
  1. *Lactating* (with no ↑ in cancer breast)
  2. *As there is no estrogen side effects:*

     CVS / Liver.....Old / smoker
- **Disadvantages & side effects**
  - Can't reverse contraception once injection started
  - ↑ Risk of osteoporosis if used in younger age (reversible)
  - As there is Prog. effect
    - . Weight gain in some patients
    - . Few metabolic effects → mild anti-insulin action, Decreased HDL-C
  - Menstrual irregularities (most common)

4) Subdermal Implants

- **Adv** → . Long acting (99% protection)
  . Action is rapidly reversible after removal
  . No side effects of estrogen
- **Disadv** → . Headache
  . *Menstrual irregularities* or amenorrhea
  . Difficult insertion & removal

5) Vaginal rings advantages:-

- Immediately reversible
- Simple introduction & removal
- Fewer side effects (bypass 1st effect of hepatic metabolism)

6) P.releasing IUCD

- **Adv** → as (POP)...levonorgestrel
- **Disadv** → 7 p

⊖ Ovarian factor infertility

Definition ⇨ infertility is Inability To Conceive after 1 year of continuous marital life without use of any contraceptive method

Incidence ⇨ 10 –15 % (incidence rise with ↑ of age)

Etiology

- ➟ May be ≥ one cause
- ➟ The ovary is the commonest cause of 1ry Infertility (25%)
- ➟ The most important cause is PCO; however ovarian causes may be divided as:

  - Group **I**..... H-P failure.....as in amenorrhea
  - Group **II**..... H-P dysfunction.....PCO, idiopathic anovulation
  - Group **III**....Ovarian failure.....Turner $, ROS, POF
  - Others
    - *Hyperprolactinemia*...(20 % of ovulatory dysfunction)
    - *Hyperandrogenism*
    - *LPD*... ....*Luteal phase defect* (4% of infertile patients)
    - *LUFS*... ... .*Luteinized Unruptured Follicle Syndrome*

Assessment

- ➟ The male is assessed first by semen analysis
- ➟ Then.....assessment of the female

◈Symptoms suggesting ovulation

- Regularity of cycles.....spasmodic dysmenorrhea....PMS
- Midcyclic (ovulatory) symptoms:-
  - .*Discharge* → due to ↑ cervical secretion (E effect)
  - .*Pain (Mittleschmertz)* → due to ovulation
  - .*Spotting* → due to relative drop of estrogen level

◈Other important factors in history

- Galactorrhea.....headache, visual disturbances are suggestive of pituitary adenoma
- Hirsutism.....may suggest hyperandrogenism
- Changes in hair texture, weight, hot/cold intolerance (thyroid)
- Lack of 2ry sexual ccc
- Advanced age, hot flushes (POF)

◈Tests for ovulation

- ▸ Morning BBT (0.3–0.5°c rise in 2nd half of cycle) d.t. 'P'
- ▸ Vaginal smear ⇨ progesterone effect (intermediate cells)
- ▸ Cervical mucous ⇨ profuse, +ve Spinnbarkeit, +ve fern....E effect
  turns –ve on day 17-21.....P effect
- ▸ Premenstrual endometrial biopsy
  - If ovulation → secretory endometrium
  - If CL insufficiency → lag behind menstrual dates by ≥ 2–3 days
- ▸ Hormone assay
  - **Mid-luteal progesterone** (21) ⇨
    - >12 ng/ml → ovulation + good CL function
    - 3-12 ng/ml → ovulation + CL insufficiency
    - < 3 ng/ml → anovulation
  - **Detection of LH peak** ⇨ ovulation within 36 hrs (VALUE..?)
- ▸ Folliculometry (serial U/S) ⇨ gradual ↑ in follicle size to 20-22 mm
  followed by sudden collapse

◈Tests for other ovulatory dysfunction

- ▸ If amenorrhea----------Prolactin, $T_{3\&4}$, progesterone challenge test,
  Gn. assay...**day 3** rd
- ▸ If hyperprolactinemia-----Prolactin, CT brain
- ▸ If hyperandrogenism------DHEA-S, testosterone

Treatment of anovulatory infertility

A) General .....PCR-GG.....

- Correct PSYCHOLOGICAL factors
- Correct COITAL errors....good timing
- REASSURANCE if the patient seeks rapid outcome
- Improve GENERAL health
- Treatment of any GROSS pathology (fibroid) or local infections

B) Specific ttt of the ovarian cause

- Anovulation e.g. PCO → induction of ovulation
- If associating IR → oral hypoglycemics
- Hyperprolactinemia → dopaminergic drugs
- LUFS → induction of ovulation
- LPD → prog. in the 2nd ½ of the cycle
- Resistant ovary syndrome → induction by high doses Gn.

Ovulation Induction

1- Clomid + HCG

- It is synthetic non-steroidal antiestrogen given in a 50 mg tab starting from the 2nd day of the cycle for 3–6 cycles
- Follow up is done by mid-luteal progest & U/S folliculometry
- HCG is given 5.000–10.000 IU IM when the leading GF is mature

2- If failed, may add the following

- Bromocriptine → even if the prolactin level is normal
- Dexamethasone –› suppress adrenal androgen
- Nalotrexone (opioid receptor blocker) → opiods ↓ GnRH release
- Thyroxin → in cases of hypothyroidism

3- If failed, Human Menopausal Gn (HMG) is given

- Ovulation occurs in more than > 90% per treatment cycle
- Treatment is continued for 3-4 successive cycles
- However side effects are more e.g. OHSS

Laparoscopy

* Laparoscopic ovarian drilling
  - 4-8 punctures in each ovary for 2-4 seconds each
  - Advantages → less adhesions:- pregnancy rate 70 %
* Action
  - Removal of the thick tunica → allows the follicles to rupture
  - Removal of part of theca cells → reduction of androgens

Assisted reproductive technology (ART)

1- Artificial insemination husband (AIH)

- Better results when AIH is done with induction of ovulation
- Better results with gonadotrophins than clomid

2- In Vitro Fertilization & Embryo Transfer –IVF & ET–

- The procedure is repeated for 3 or 4 successive cycles
- The pregnancy rate is 20-30 % (25 yrs) – 10% (40 yrs) per ttt cycle

3- Micro-insemination – ICSI–

- A single sperm is injected into the cytoplasm under microscope
- Indicated in failure of IVF trials or refractory unexplained cases

Maria Tony Abou-Elias, 24 years, 1ry infertility for 2 years.....Anovulation

Personal history:

- *Maria Tony Abou-Elias*, 24 years old, she's a secretary & married for 2 years and she is nulligravida. She lives in Shobra & has no special habits of medical importance
- Her husband name is Gad Sheweery Zaman, 32 years old, working as an employee. He is a heavy smoker (2 packets /day).

> *Note here that detailed husband history is a must....Some prefer to ask her if he has any genital or urological problems ....but she'll be not sure.....Note that her husband may have children from another wife....*

C/O: she complains of inability to conceive for 2 years

> *Note that too many patients will be embarrassed from their condition...they may tell you other complaints (such as galactorrhea, excess vaginal discharge, a cyst on the ovary, irregular cycles, chronic pelvic pain)*

Present history:

- The patient was referred to our hospital due to inability to conceive for 2 years, although there was regular relationship without use of any no contraception.....*the definition.* This is the first marriage either for the patient or her husband and she is referred to undergo laparoscopy.
- The patient was also complaining from menstrual irregularities which have started 1 year before her marriage. Cycles were becoming too infrequent, sometimes delayed for up to 2 months. Also, menstruation was prolonged more than 6 days & the patient changes from 4–5 napkins /day. Bleeding was painless. There were no symptoms suggestive of premenstrual tension as mastalgia

> *Here, we are starting by asking about the ovary (1ry infertility). Questions are directed to the nature of the cycle... to see whether regular or not. The following questions are targeted to know the etiology of these irregularities:-*

- *The condition was not associated with*
  - Symptoms suggestive of genital endocrinology
    .Hirsutism or change in breast size, harshness of voice……
    suggestive of PCO or androgen secreting tumor
    . Breast discharge……..suggestive of hyperprolactinemia
    . Excess weight gain……suggestive of PCO
    . Hot flushes, dysparuenia…suggestive of POF
  - Symptoms suggestive of general endocrinology
    . Hypothyroidism…..as…constipation, weight gain, puffy eye lids, hoarseness of voice, intolerance to cold
    . Hyperthyroidism…..as…nervousness, palpitation, tremors, diarrhea
    . Cushing syndrome…as
    . Diabetes milletus…..as
  - Symptoms suggestive of a general disease
    . Liver disease…..as…yellowish discoloration of sclera, change in color of urine or stool, bleeding from nose or gums
    . Tuberculosis….as…night sweat & fever, loss of weight & appetite

- *OK, simple…an't it ??. then try to exclude other causes of infertility.*
  ⇨ also, there were no symptoms suggestive of
  - Endometriosis…severe pain, back ache, dysmenorrhea, menorrhagia
  - PID…recurrent fever, lower abdominal pain, offensive discharge
  - Fibroids….as menorrhagia, pelvi-abdominal mass, pressure sympt
  - Cx infection….as deep dysparuenia, muco-purulent discharge
  - Vag. infection…..as white curdy or green-yellow offensive discharge

- *OK, where is the patient story, what are the investigations done, medications taken?*
  - One year ago, the patient started to be anxious about conception. She sought medical advice at a private clinic where a routine ultrasound was done and the patient was told that she have cystic ovaries.
  - She started a program of induction of ovulation, but first a husband semen analysis was done that proved normal. The patient received clomid for 3 successive cycles after which clomid was stopped for 2 months.
  - Four months ago, prolactin level was checked & proved high by the patient's words but no available reports. The patient then received induction by certain injectables, during which monitoring of ovulation by ultrasound was done

- *Where is the rest of the infertility work up? All must be mentioned whether done or not*
  - **HSG** was not done
  - **$D_{\&}C$** was not done
  - **Post coital test**
  - **Cervico-vaginal** $C_{\&}S$ was not done
  - **Laparoscopy** was not done

- *At last, where is her husband, what about their relation-ship?.*
  - The husband is an employee, they have regular marital relationship. He doesn't complain from any problems in the uro-genital system & never done operations in his genital organs or in his back according to the patient's words
  - He is a heavy smoker (2 packs /day) but he doesn't smoke shisha or hashisha and he doesn't receive any medications for any general disease
  - They use to have intercourse every other day, there is no dysparuenia, and they never use lubricants. She usually has vaginal douching immediately after intercourse & she complains from effluvium seminis *(sexual history)*

- *On systemic review., no abnormality was detected (or review of other body systems is irrelevant)*

Menstrual history:

- Her menarche started at 12 years (*delay may be indicative of ov. problems*)
- Her periods used to be regular till 3 years ago (with D/C: 4 /30) after which she started to suffer from meno-metrorrhagia, where menstruation was prolonged more than 6 days & the patient changes from 4–5 napkins
- There is no midcyclic discharge, pain, spotting (suggestive of ovulation)
  - There is no intermenstrual or postcoital bleeding.
  - Menses is not preceded by PMT
  - There is no associating spasmodic dysmenorrhea
- LMP was at 20 / 3 / 2007

Obstetric history she is NG

Past history:

- Medical → no TB, DM, Hypertension, fever, endocrine disorders
- Surgical → no CS, $D_{\&}C$, ovarian cystectomy, laparoscopy

Family history: → no DM or TB

Oral questions

- **What is the most probable cause for infertility in this case in your opinion? Why?** Ovarian.....as it is the usual cause in 1ry infertility, also the patient have a history of menstrual irregularities suggestive of anovulation
- **How to prove that a female is ovulatory**
  - *History*.....esp regularity, PMT, spasmodic dysmenorrhea
  - *Investigations*...esp midluteal serum progesterone
- **How to exclude a tubal disease**
  - *History*.....recurrent fever, lower abdominal pain, discharge
  - *Investigations*.....mainly by HSG & laparoscopy
- **What are the other indications of laparoscopy in infertility**
  - *Diagnostic*..... tube (adhesions), peritoneum (endometriosis)
  - *Therapeutic*.....adhesiolysis, fulguration of endometriotic spots
- **What is the most common cause for anovulation? Define it**.....PCO: a chronic state of anovulation characterized by cystic appearing ovaries, hyper-estrogenemia & hyperandrogenism
- **How to diagnose PCO**
  - *Clinical picture*.....of SOHA
  - *Ultrasonic*..... criteria suggestive of PCO
  - *Specific hormonal*....changes esp LH / FSH + ⇧ androgens
- **What are the other causes, how to diagnose & to treat them?**

	Investigation	Treatment
Hyper-prolactin	- Prolactin level (2-20ng/ml) - CT brain - Thyroid function tets	- Parlodel - Dopergine - Cabergoline - Quinagolide
Hyper-androgen	- Androgen level (0.2 – 0.8 ng/ml)	- COC - Cyproterone acetate
LPD	- Premenstrual spotting - Premenstrual biopsy - Midluteal progesterone	- Proper induction + HCG
LUFS	- U/S... failure of follicle to ↓ in size	- Proper induction + HCG
ROS	- ↓ E + ↑ FSH - Ovarian biopsy (normal)	- Induction is difficult - May→spont recovery
POF	- ↓ E + ↑ FSH - Ov. biopsy (no follicles)	- No hope - HRT

Zizi Mostafa Badrawy. 31 years. P1+1
2ry infertility for 6 years.....Ascherman syndrome

C/O: she complains of inability to conceive for 6 years

Present history:

- The patient C/O of inability to conceive for 6 years after having previously a child inspite of the regular relationship & the absence of contraception..... *def of 2ry infertility.* This is the 1st marriage for the either patient or her husband. She is referred to undergo *hysteroscopy.*
- The patient C/O of hypomenorrhea as menses occur only 1 day & only 1 napkin is changed. This condition started after doing a D&C 2 yr ago. Before this, she used to have regular cycles occurring / 28 days and lasting for 4 days. After the D&C the patient complained of fever for which she was hospitalized. *(symptoms suggestive of Ascherman)*
- *The condition was not associated with*
  - Symptoms suggestive of genital endocrinology.....
  - Symptoms suggestive of general endocrinology.....
  - Symptoms suggestive of a general disease.....
- *Also, there were no symptoms suggestive of*
  - Endometriosis as .....PID as .....
  - Uterine fibroids as .....Cx / vag infection as .....
- *OK, where is story, what are investigations done, medications taken?*
  - One & half years ago, the patient started to be anxious about conception. She sought medical advice at a private clinic where a routine ultrasound was done that proved free
  - A HSG was done 2 months later that showed a small uterine cavity with adhesions as the patient states. A D&C was done 2 months to break the adhesions but the condition didn't improve
- *As regard other infertility work up*
  - Semen analysis was not done.....Post coital test was not done
  - Cx-vaginal C&S was not done.....Laparoscopy was not done
- *Sexual history*
  - The husband is working in the military defense, he is a heavy shisha smoker. He doesn't complain from any problems whether medical or surgical in the uro-genital system
  - They use to have intercourse only on his vacations which comes only a week / month, there is no dysparuenia, and they never use lubricants. She usually has vaginal douching immediately after intercourse & she complains from effluvium seminis
- *Review of other body systems is irrelevant*

Oral questions

- **What is your diagnosis? Please state it right:** Zizi Mostafa Badrawy, 31 years, P_{1+0}, 2^{ry} infertility for 6 years for investigations
- **What are the clues to suspect Ascherman syndrome?**
  - *History* ⇨ menses getting "lighter" after D&C
  - *Investigations* ⇨ HSG shows a small uterine cavity
- **How to avoid Ascherman syndrome?**
  - *Stop curettage* on reaching basal endomet. (known by gritty sensation)
  - *Aseptic technique* during D&C
- **What are the parts of endometrium?**
  - *Stratum basalis*.....(around gland bases).....¼ thickness
  - *Stratum spongiozum*...(around gland bodies)....½ thickness
  - *Stratum compactum*...(around gland necks)..... ¼ thickness
- **What is the physiology of menstruation?**
  Degeneration of CL ⇦ withdrawal of Prog. support of endometrium → ⇩ edema & shrinkage of endomet. → coiling of spiral arteries ⇨ breakdown of lysosomes → PG → severe ischemia ⇨ necrosis only of strata compacta & spongioza → shedding of endometrium
- **How to confirm her condition?** Hysteroscope? What is its value
  - *Diagnostic* ⇨

	Uterine adhesions	Tubal ostia
Minimal	< ¼ involved	Both are seen
Moderate	¼ – ¾ involved	One is seen
Severe	> ¾ involved	None is seen

  - *Therapeutic* ⇨ adhesiolysis (better than doing it blindly by D&C)
- **What are the other uses of hysteroscopy in infertility?**
  - *Diagnostic* ⇨ evaluation of uterine cavity & taking endometrial biopsy
  - *Therapeutic* ⇨ adhesiolysis + way to do tubal cannulation
- **What is Sheehan syndrome?** Pituitary pan-hypo-pituitarism following massive bleeding (esp. PPHge)
- **Is it right not to have semen analysis?** No, it must be done, even in 2^{ry} infertility, as the husband may also be affected by a new disease
- **What are the parameters of a normal seminogram**
  - 20.....million /cc
  - 30.....normal forms (strict WHO criteria)
  - 50.....forward motility

Warda Mahmoud Zahran, 33 years, P0+1
2ry infertility for 5 years mostly chronic PID

C/O: she complains of inability to conceive for 5 years

Present history:

- The patient is referred to our hospital due to inability to conceive for 5 years inspite of the regular relationship & the absence of contraception. This is the 1st marriage for the either patient or her husband. She is referred to undergo *laparoscopy.*
- The patient condition started 5 years ago when a laparotomy was done in El-Demerdash hospital for an ectopic pregnancy. The right Fallopian tube was removed & the patient received 2 units of blood
- After that the patient noticed recurrent attacks of lower abdominal pain, backache. There was also associating excessive vaginal secretions *(amount)*, sometimes yellowish, sometimes curdy white *(color)*, they were malodorous *(odour)* and associated with vulval itching *but no associating fever (effect)*
- The patient sought medical advice; she received some antibiotics in the form of oral tablets & local vaginal suppositories. The complaint of discharge didn't change *(course)*, it might decrease for sometime but the sensation of lower abdominal pain & backache was continuous.
- Menstruation became heavier in the last year, coming for 6 days every month and changing more than 4 napkins daily which is double the patient norm *(effect)*
- *The condition was not associated with sympt suggestive of* genital .....
- *Also, there were no symptoms suggestive of* endometriosis as .....
- *OK, where is story, what are investigations done, medications taken?*
  - 3 yrs ago, a HSG was done that proved absent right tube and adhesions surrounding left tube. The patient has undergone laparoscopy in El-Hussein hospital to break these adhesions. After a yr, another HSG proved that left tube is still blocked.
  - One month ago, the patient complained of lower abdominal heaviness associated with ↑ in temp. Since then she was hospitalized, where U/S was showed a mass present in the left side. She received IV antibiotics & fluids but size didn't change
  - The patient is prepared to undergo laparotomy after 3 days
- *As regard other infertility work up*
  - Semen analysis was normal.....Post coital test was not done
  - Cx-vaginal C&S was not done.....Laparoscopy was done on 2007
- *Sexual history, Review of other body systems is irrelevant*

Oral questions

- **What are the clues suggestive of PID in this patient**
  - *History* ⇨ previous ectopic pregnancy
  - *Symptoms* ⇨ recurrent lower abdominal pain + discharge
  - *Inv.* ⇨ HSG (blocked left tube), laparoscopy, U/S (adnexal mass)
  - *Also* the commonest cause of 2^{ry} infertility is tubal & the commonest affection of the tube is by infection
- **What is the most causative organism? How to diagnose it?** Chlamydia
  - *Cytology* → inclusion bodies + >10 pus cells / oil immersion field
  - *Culture* → on tissue culture (MacCoy)
  - *Antigen detection* → ELISA
  - *PCR or DNA probing*
- **What are the methods to check tubal patency?** HSG, Laparoscopy, Sono-hystero-salpingography (HYsterosalpingo-COntrast-SonographY), *Tuboscopy, tubal cannulation*
- **What is the name of the dye used in laparoscopy?** methylene blue
- **What is the name of the dye used in HSG?**
  - *Lipidol* (40% organic iodine in poppy-seed oil)
    - . After 24 hrs another film is taken to denote any spillage.
    - . It gives better *diagnostic & therapeutic* effect
  - *Urograffin* (40% iodine in water) ✓✓
    - . Here the 2nd film is taken ½-1 hour later.
    - . It gives less diagnostic & therapeutic effect
    - . But it is less liable to embolism (water soluble)
- **What type of HSG was done?** Urographin. How did you know? The 3 films were done at the same day
- **Do you think they will do adhesiolysis for this patient?** No, why? They will do salpingectomy…this is the only way to treat chronic PID after failure of antibiotic to decrease its size, also to decrease the local symptoms & the general toxemia produced from the abscess site, moreover, no need for a non-healthy tube. Also, recently, it was proved that salpingectomy improves the outcome of ART
- **Ok, then what is the next step**……ART (IVF & ET)
- **What is meant by unexplained infertility?** Infertility in spite of:
  1. Normal **ovulation** (proved by tests for ovulation)
  2. Normal **patent tubes** (proved by HSG, laparoscopy)
  3. Normal **uterine cavity** (proved by PEB, hysteroscopy)
  4. Normal **semen analysis** (at least done twice)
  5. Normal **postcoital test** (good cx mucus & sperm motility)

Jody Waheeb Akmal, 25 years, NG
Try infertility for 2 years.....Endometriosis

C/O: she complains of inability to conceive for 2 years

Menstrual history:

- Her menarche occurred at 13 years. Her periods used to be regular till 5 years ago (with D/C: 3 /28) after which she started to suffer from menorrhagia, where menstruation occurred for 6 days monthly
- There is midcyclic discharge, menses is preceded by PMT
- There is associating severe spasmodic dysmenorrhea
- LMP was at 22 / 10 / 2010

Present history:

- The patient is referred to our hospital due to inability to conceive for 2 years inspite of..... She is referred to undergo *laparoscopy.*
- The patient condition started 5 years ago when her menses became heavier. She started to change 5 napkins daily for 7 days instead of 3 napkins for 4 days. She received medication in the form of certain oral hormone tab for 21 day every month.
- Her condition was just improved temporary, but after stopping the drug, the menorrhagia recurred. Also, she was complaining of severe spasmodic pain that started few days before menses and increased in severity with menstruation. Pain was just relieved slightly several days after menses. An U/S was done which proved free & the condition was controlled only by oral analgesics & hormonal drugs
- *The condition was not associated with sympt suggestive of* **genital .....**
- *Also, there were no symptoms suggestive of* **endometriosis as .....**
- *OK, where is story, what are investigations done, medications taken?*
  - One & half years ago, the patient started to be anxious about pregnancy, both U/S & hormonal check-up were done proved free. Also husband semen analysis was free.
  - Induction of ovulation was started 1st by clomid for three consecutive cycles then injectables were taken.
  - Six months ago a hysterosalpingogram was done that proved presence of adhesions. Also U/S discovered presence of an ovarian cyst
  - The patient is prepared to undergo laparoscopy after 3 days
- *As regard other infertility work up*
  - **Semen analysis** was normal.....**Post coital test** was not done
  - **Cx-vaginal** C&S was not done.....**Laparoscopy** was not done
- *Sexual history, Review of other body systems is irrelevant*

- **What is your provisional etiology? Why?**.....Endometriosis
  - *Triad of* ⇨ infertility, pain, bleeding
  - *U/S* ⇨ ovarian cyst (may be chocolate)
  - *HSG* ⇨ adhesions
- **How does endometriosis cause infertility?**
  - *Anatomical* ⇨ adhesions around tube & ovary
  - *Physiological* ⇨ anovulation & corpus luteum insufficiency
- **How to confirm endometriosis?** .....laparoscopy
  - *See* ⇨ the characteristic lesions (petichae, spots, nodules)
  - *Biopsy* ✓ ⇨ active endometrial glands outside the uterine cavity
- **What are the causes of pain in endometriosis?**
  - *Dysmenorrhea*.....*Dyspareunia*
  - *Dysuria*.....*Dyschazia*
  - *Deep –chronic– pelvic pain*.....*Dorsal pain –Backache–*
- **What may be the cause of acute abdomen?** rupture endometriotic cyst
- **What are the other DD of bleeding & pain**
  - Pelvic inflammatory disease, tuberculosis
  - Tumors: fibroid, ovarian masses
- **What is the DD of adnexal swelling**
  - *Ovary* ⇨ neoplastic & non-neoplastic ovarian swellings
  - *Tube* ⇨ ectopic pregnancy, hydrosalpinx, pyosalpinx
  - *Broad ligament* ⇨ broad ligamentary fibroid, paraovarian cysts
  - *Uterus* ⇨ pedunculated subserous fibroid
  - *Others* ⇨ pelvic kidney, retro-peritoneal swellings
- **What is the medical therapy for endometriosis?**
  - *Progestins* ⇨ given in continuous manner for 9–12 m
  - *Danazol* ⇨ 400-800 mg/d for 6-9 months
  - *Gestrinone* ⇨ 1.25–2.5 mg twice / week for 6-9 m
  - *LHRH analogue* ⇨ Decapeptyl (Zoladex SC / 28 days)
- **Why laparoscopy is done?**
  - *Endometriotic spots* ⇨ removal or electric fulguration
  - *Chocolate cysts* ⇨ ovarian cystectomy
  - *Adhesions* ⇨ peritubal adhesiolysis
  - *Pain* ⇨ LUNA (laparoscopic utero-sacral nerve ablation)
- **What is hormone suppression therapy?** use of the anti-estrogens (e.g. danazol) to suppress growth of the endometrial glands. Recently proved to have no benefit
- **What if above therapies failed? What is the next step?** *ART*

Case 1

A P1+0 36 years old lady presents with 2ry infertility. She states a two year history of amenorrhea. Her partner's semen analysis is normal. Tubal patency is confirmed on HSG. There was no bleeding after receiving progesterone injection. LH level was 25 mIU/ml and FSH was 38 mIU/ml.

- **What is the most appropriate diagnosis**
- **Enumerate etiology of such condition...Did by CIA**

Case 2

A 34 year old lady Para 2+0 has come to your office with 2^{ry} infertility for 3 years. Test for ovulation, HSG and laparoscopy show no abnormalities. She gives prior history of repeated cauterization for cervical erosions. A postcoital test is then ordered

- **What would be the proper timing for such procedure**
- **If the results are to be abnormal, give a possible reason and the management in this case**
  - Poor cervical mucous → wrong time of cycle
  - Poor glandular secretion → clomid, previous cautery or amputation
  - Infection → prostatitis
  - Immunological factors → cervical mucus (IgG) or in serum (IgM)
- **If this patient were to become pregnant and during delivery, progress was slow, give a possible reason and the management in such a case**

Case 3

A 34 year old woman with a body mass index 36, has a day 23 progesterone of 8 ng/ml. HSG shoed patent tubes. Husband analysis showed 3 ml, ph 7, sperm count 20 million/ml. She had tried 6 months of clomiphene citrate with documented anovulation. A trial of metformin was unsuccessful.

- **What is your next plan?**

Case 4

A couple presented to subfertility clinic with FSH 6.1 mIU/ml, LH 4.8 mIU/ml, prolactin 22 ng/ml and day 21 progesterone 20 ng/ml. Laparoscopy done 6 months ago showed normal pelvis with patent tubes. Semen analysis shoed: volume 3 ml, count 10 million/ml, 18% forward progression, normal forms greater than 50%. No agglutination or white cells were found. No organisms were seen.

- **What is the most appropriate diagnosis**
- **Enumerate etiology of such condition**

Case 5

A 29 year old woman presents with secondary infertility. She had a spontaneous miscarriage 3 years ago followed by an ectopic pregnancy. She was treated for chlamydial infection 4 years ago. She has regular menses with severe colicky pain esp in the 1st two days. Also she suffers from pelvic heaviness lasting for a week before menses and an associating deep dyspareunia. Her partner's semen analysis was normal on 2 different occasions.

- **What is the most appropriate diagnosis**
- **How to reach final diagnosis**

Case 6

A 29 yr old woman is complaining of 1ry infertility. Her husband is medically free apart from smoking 1 box a day. She has no specific previous history except for appendicectomy at 12 yrs. Her BMI is 30 kg/m2. her periods occur every 31-46 days and can be heavy at times but not painful. Day 3 LH: 12.5 mIU/ml, FSH 4.9 mIU/ml, progesterone day 21: 4 ng/ml.

- **What is your provisional diagnosis?**
- **Complete your infertility work up?** ◗ **How to treat such a case?**

Case 7

A 27 year old NG has come to the clinic with infertility for 2 years and 2ry amenorrhea for the past 5 years. She had had galactorrhea for 4 years. On measuring the prolactin level, it was found 200 ng/ml. The patient was put on drug therapy for 6 months and then refereed to surgery. After the operation, the prolactin level decreased to 16 ng/ml but the menses didn't return and she noticed that her breasts were becoming smaller along with a general feeling of fatigue

- **What was the surgical procedure done?**
- **What are different drugs that may be taken before surgery?**
- **What has occurred > operation & what would be the management**

Case 8

A 33 year old woman came to the infertility clinic. She complains of pelvic pain and amenorrhea associated with low grade fever and weight loss. Physical examination demonstrates a tender pelvic cystic swelling with indefinite borders. Laparoscopy was done which revealed dense pelvic adhesions together with segmental dilatation of the tubes and everted fimbria. Biopsy was taken and showed marked infiltration with giant cells

- **State the possible lines of therapy for such a patient?**

Case 9

A young NG patient is married 6 years ago, but failed to conceive until now, Semen analysis is normal, together as HSG, day 21 progesterone level. The patient has done laparoscopy 2 months ago that proved normal then ART was decided. The patient stared to receive IM injections staring from the 2nd day of the cycle. Suddenly the patient was found dyspneac, with lower abdominal pain.

- **What is the most probable diagnosis**
- **What is the stage of that disease**
- **How to avoid such condition**
- **How to treat such condition**

Case 10

A 29 year old lady with primary infertility for 3 years has been experiencing premenstrual spotting for the past 6 years. On doing an endometrial biopsy on day 22 of the cycle showed: endometrium consistent with day 17 of a normal cycle

- **What is the most likely diagnosis**
- **Enumerate risk factors causing similar situation**
  - Defect in CL function
  - Early degeneration (luteolysis) of CL
  - Endometrial insensitivity to progesterone
- **How would you confirm this diagnosis?**
- **How would you manage such a condition?**

Case 11

A 22 year's old patient, married since 3 years comes to the outpatient clinic with a history of inability to conceive. Since 2 years she started to complain of severe central lower abdominal pain that occurs 2 days before, continues during menstruation and 2 days after it ends. Pelvic U/S shows empty cavity. The right ovary shows a unilocular cystic mass 5 cm in diameter. The left ovary is normal.

- **What is the most probable diagnosis? explain why?**
  - **History**
  - **Examination**
  - **Investigation**
- **What are the investigations required to confirm the final diagnosis**
- **What is your plan of ttt**

1- Regarding this test all are true except

a- It may reach up to 15 cm
b- It turns –ve 3 days after ovulation in Ashermann syndrome
c- +ve test means watery cervical mucous
d- +ve test depends on estrogen
e- +ve test means ovulation

2- Which is the incorrect statement for that medicine:

a- It is given subcutaneous
b- It is indicated in endometriosis
c- It is indicated in metropathia haemorrhagica
d- It is given every 6 months
e- It leads to osteoporosis after 6 months

3- This figure may be caused all except (laparoscopy)

a- Chlamydia
b- Gonorrhea
c- Endometriosis
d- Tuberculosis
e- Bacterial vaginosis

4- All are advantage of laparoscopy in infertility except

a- Good evaluation of tubal factor.
b- Diagnosis of endometriosis
c- Diagnosis of Aschermann syndrome
d- Good visualization of pelvic adhesions
e- Direct visualization of corpus luteum

5- Regarding that procedure, all are true except

a- Is done unilateral
b- Is done in smooth white thick capsule
c- May lead to adhesions
d- Injury of ureter may occur
e- Surgical emphysema may occur

6- All the following is true regarding IVF & ET except

a- Down regulation is done by gonadotrophins
b- Ovarian stimulation may be done by Gn RH
c- More than one embryo is transferred at a time
d- Success rate is inversely proportional to age
e- May be done in bilateral cornual block

7- Regarding that procedure, all are true except

a- Indicated in oligospermia
b- Indicated in cervical hostility
c- Done postmenstrual
d- Better results with clomid
e- Results are inferior to IVF & ET

Contraception Case 1

A 31 year old lady was asking reversal of sterilization. Six years ago, she had been happily married, having 3 healthy children. She has been advised against COC due to varicose veins and as the IUCD caused painful heavy menses, she requested sterilization which was done by laparoscopy. Nine months ago, she was divorced due to betrayal of her husband. Her new partner is eagerly seeking children.

- **Comment on the initial decision to sterilize a women at 25 yrs**
- **What are the absolute contraindications for COC?**
  - Patients with history of DVT, pulmonary embolism, CHD
  - Markedly impaired liver function, history of cholestasis in pregnancy
  - Lactation + suspected breast cancer
- **What is the other alternative contraception for this lady than sterilization?**
- **What are the hazards of laparoscopic sterilization**
  - Anesthesia
  - Early.....hge, injury, infection
  - Special media.....air in laparoscopy
  - Later on.....adhesions
- **When to resume relationship after male sterilization?**
- **What would you do if reversal of sterilization failed**

Case 2

A 38 years old smoker lady have been advised to stop COC & use an IUCD instead. She started to experience heavy menses in the 1st 3 months but this subsided after a while. Few days ago she started to complain of an acute suprapubic pain with a fainting attack. She also gave history of a vaginal discharge for the lasted two weeks.

On arrival to the hospital, she was feverish, with tender right adnexal swelling & tender movement of the cervix

- **What are the causes of acute abdomen due to an IUCD**
- **What is the most probable diagnosis? why?**
- **How to treat such a condition?**
- **What are the most frequent organisms causing her vaginal discharge**
- **What are the other alternative contraception for this lady**

Case 3

A 27 year old married for 10 years was taking COC regularly for the last 2 years. Her menses was delayed for 8 days and she complained from nausea & lower abdominal heaviness.

She was advised to have a pregnancy test. Upon arrival to hospital, she started to complain from heavy attack of vaginal bleeding. Examination revealed an enlarged bulky uterus with opened cervix. Emergency D&C was done but no products of conception were found but instead some yellow fatty tissue were found

- **Clarify the reasons of getting pregnant while on pills**
- **What is the management of**
  - Missing pills ➟
  - Missing period ➟
- **What is the explanation of the yellow fatty tissue & how to manage**
  - Conservative if ➟
  - Surgical if ➟
- **What are the other complications of D&C**
  1. Anesthetic complications
  2. Injury → cervical tears, patulous os
  3. Infection → prophylaxis by proper sterilization & antibiotics
  4. Hge. →
     . Hemorrhagic (perforation, retained products, 2^{ry} hge)
     . Neurogenic (if without anesthesia)
  5. Incomplete evacuation → inf & hge: re-evacuation is done
  6. Later on→ Ashermann syndrome (amenorrhea traumatica)

Case 4

Para 3+0 had an IUD inserted one month after delivery. Two months later, she came complaining of amenorrhea & she couldn't feel the threads of IUCD. Speculum examination proved absent thread

- **What is the DD**
  -
  -
  -
- **How to manage**
  -
  -
  -

1- Disadvantages of this method include the followings except:

a- Not effective as other methods.
b- Some couples find difficulty to use them consistently & correctly
c- May lead to local sensitivity reactions
d- Don't interrupt the natural phases of sexual activity.
e- Need proper storage to maintain the quality of the product.

2- Disadvantages of this method include the followings except:

b- Not effective as other methods.
c- May be difficult to use
d- May lead to dysuria
e- May need provider's help
f- May cause vaginal prolapse

3-1 This IUCD (arrow) don't:

a- Increase prostaglandin production.
b- Increase leukocyte endometrial infiltration.
c- Inhibit sperm motility.
d- Interfere with steroidogenesis.
e- Inhibit implantation of fertilized ovum.

3-2 Mechanism of action of copper IUCD includes:

a- Tubal block.
b- Inhibition of ovulation.
c- Increased tubal motility.
d- Cervical mucus hostile to the sperms.
e- Mechanical inflammatory reaction of the endometrium.

4- As regard the hormone releasing IUCD system, Tru-Exc

a- Cervical mucous is impermeable to sperms
b- Duration & quantity of menses are reduced
c- Protects from PID
d- Partial suppresses ovulation
e- Protects from ectopic pregnancy

5- Best management of an 8 week's pregnant lady on IUCD and strings are visible at external os:

a- Antibiotics as prophylactic measures against septic abortion
b- Progesterone injections for fear of threatened abortion
c- E&C
d- Removal of IUCD
e- Bed rest and observation

6-1 All the following are health benefits of COC except:

a- Endometrial carcinoma protection.
b- Protection against surface ovarian tumors.
c- Treatment of benign breast lesions.
d- Protection against cervical cancer.
e- Decrease amount of menstrual flow.

6-2 Absolute contraindications of COCs include the following except:

a- History of DVT, P. embolus, cerebral hemorrhage, coronary artery disease.
b- Markedly impaired liver function.
c- Estrogen-dependant malignant tumor: breast & uterus.
d- History of cholestasis during pregnancy.
e- Diabetes or history of gestational diabetes.

6-3 Side effects of COC include all the following except

a- Nausea
b- Dizziness
c- Vaginal discharge
d- Menorrhagia
e- Weight gain

6-4 Which of the following listings correctly ranks contraceptive methods in terms of decreasing effectiveness

a- COC, IUCD, spermicides, diaphragm, rhythm
b- COC, diaphragm, IUCD, spermicides, rhythm
c- IUCD, COC, diaphragm, spermicides, rhythm
d- Rhythm, COC, IUCD, diaphragm, spermicides
e- COC, IUCD, diaphragm, spermicides, rhythm

7- All the following are true regarding Norplant; except:

a- Anovulatory cycles may occur
b- Irregular menses is the commonest side effect
c- It is composed of progestins, levonorgestrel.
d- It is irreversible contraceptive.
e- It may lead to ectopic pregnancy

8- Advantage of implanon includes the following except

a- Effective 99% in preventing pregnancy
b- No action needs to be taken at time of intercourse
c- It is long acting, but reversible & rapidly restores fertility
d- It could be used for lactating
e- Offers protection against STD's

9- The correct statement about female surgical sterilization is

a- A 100% effective method
b- Once done, impossible to revert
c- Better to be done by laparotomy
d- May be done during C section
e- Only performed by laparoscopy

Infertility

Write short notes / essay on

- Female causes of infertility
- Diagnosis / detection of ovulation
- Causes & diagnosis of tubal factor in infertility
- Tubal factor in infertility
- Treatment of bilateral tubal block
- Causes & investigations of uterine factor in infertility
- Write short notes on immunological factors in infertility
- How can you investigate & treat a case of 2ry infertility 30 years old who delivered once 5 years ago
- Investigations of a couple with 1ry / 2ry infertility
- The use of ultrasound imagining in the investigation of infertility

Enumerate

- Causes of cervical factor in infertility
- Causes of tubal / peritoneal factor in infertility

Role of laparoscopy in infertility

	Diagnostic	Therapeutic
Tubes	Tubal block (to confirm HSG)	salpingolysis, salpingostomy
Ovary	PCO & other ovarian swellings	cautery for PCO, ovarian cystectomy
Endometriosis	Endometriotic petichiae & spots	cauterization of implants
Others	To evaluate unexplained infertility	Ovum pick up in IVF

Role of Hysteroscopy in infertility

	Diagnostic	Therapeutic
Tubes	Tubal block (assess the cornu)	Cornual bypass (tubal cannula)
Uterus	Any major pathology - Fibroid - Septum - Ascherman	 - Polypectomy - Septo – metro– plasty - Adhesiolysis

Role of Ultrasonography in infertility

	Diagnostic	Therapeutic
Tubes	Saline sono- hysterography	Break thin adhesions
Ovary	Folliculometry	Ovum pick up in IVF
Uterus	Major pathology in ovary / uterus	U/S aspiration of ovarian cysts

Contraception

Write short notes / essay on

- Natural methods of contraception

- Hormonal contraception (advantages & disadvantages)
- Contraindications of hormone contraceptives
- Types & complications of hormonal contraception
- Oral contraceptive spills
- Side effects of contraceptive pills
- Long acting hormonal contraceptive methods
- Injectable contraceptives

- What is the IUCD & its complications
- Types & complications of IUCD
- Contraindications to IUCD use
- Missed IUCD
- Management of missed IUCD
- Bioactive IUCD

Others

- Post coital contraception
- Contraception for newly married
- Contraception during lactation
- Postpartum contraception
- Immunological factors in contraception
- Evaluation of the common methods for contraception that can be used for 35 years old P5 lady? She is clinically healthy

Enumerate

- Types of hormonal contraception & their advantages / disadvantages
- Side effects of the combined oral contraceptive pills
- Advantages & disadvantages of sub-dermal implants

- Indications / contraindications / complications of IUCD
- Side effects of IUCD

- The available methods of emergency contraception

Definition

Progressive systemic bone resorption → micro-architectural ↓ of BMD
Leading to
Increased fractures (esp. cancellous: vertebra, femur neck, distal radius)

Normal physiology

Peak bone mass is at 25 yrs (greater BMD attained at young age is protective)
Rate of bone loss ↑ from 0.5% /yr in pre to 2-3% in post-menopause

Clinical picture

- Rheumatic joint pains, backache, dowager hump
- Risk factors
  +ve FH, cigarette, alcohol, sedentary life
  Chronic liver or renal diseases, drugs (steroids, heparin, thyroxin)

Investigations

1. DEXA → **D**ual **E**nergy **X**-ray photon **A**bsorptiometry (most accurate)
   . T-score (compares BMD with normal young adults) >2.5 SD
   . Z-score (compares BMD with normal age matched) > 2.5 SD
   . Plain X-ray needs loss of > 40% of BMD to detect osteoporosis
2. Ultrasound → on calcaneous, head of humerus
3. Biochemical markers in urine → urinary collagens

Management

1- GENERAL

- Reassurance: menopause is a normal midlife event.
- Improve life-style: avoid factors which can precipitate hot flushes as
  hot weather, nervousness, excessive coffee
  Cessation of smoking & alcohol
- Improve diet: Adequate intake of Ca & vit D form adulthood
  Calcium → 1000 mg daily } slows bone loss but don't
  Vitamin D → 800 IU daily } ↑ the bone mass
- Exercise → improves osteoporosis
- Sedatives → tranquilizers for nervousness & depression

2- Hormone Replacement Therapy

- Mechanism
  - ⇩ action of osteoclasts (through inhibiting effect of parathormone)
  - ⇧ Ca^{++} (↑ GIT absorption, ↓ renal loss, stimulation of calcitonin)
- Benefits of HRT (WHI study)
  - . ↑ 5% in bone density, ↓ 30% in fractures
  - . Given mainly for the 1st 10 yrs (max rate of bone loss)
  - . If HRT is stopped, usually leads to → rebound bone loss
  - . Moreover, it is *no more* recommended, try to use other alternative non-hormonal drugs for osteoporosis
- Drugs
  - ▸ Estrogen & progesterone
    - cyclic (withdrawal bleednig)
    - continuous amenorrhea (better)
  - ▸ Non-oral Estrogen
    - 1] **Transdermal Patch** or skin gel
    - 2] **Subcutaneous Implant** → inserted in abdominal wall / 6 m
      The most important
      1mg produces supra-physiological doses

3- Non-hormonal Drugs

1] **SERM** (Selective Estrogen Receptor Modulators)…Tamoxifen
- Exert estrogenic effects on desired tissues (CVS & bones)
- Avoids estrogen stimulation on others (uterus, breast)

2] **Tibolone (Livial)**
- A synthetic steroid with weak estrogenic, progestogenic, androgenic
- Dose → 2.5 mg tablet /day
- Advantages (according to tissue affinity)
  - . Good Relieve of menopausal symptoms.
  - . ***Estrogen*** doesn't stimulate uterus or breasts
  - . ***Progesterone*** has no need to be added
  - . ***Androgen*** improves osteoporosis & LIBIDO

3] **Bisphosphonates**
- Inhibit osteoclasts → ↓ bone resorption
- They are the most potent e.g.: Alendronate (Fosamax)
- 10 mg /day or 70 mg once weekly → ↑ BMD by 10% after 1 year

4] **Clacitonin** (from salmon) → intranasal 200 IU (inhibits osteoclasts)

5] **Fluoride** → the only known osteoblastic drug

❷ Management of menopause

Introduction

- Menopause could be defined as the event of physiological permanent cessation of menstruation due to exhaustion of ovarian follicles
- Menopause is usually diagnosed retrograde when menstruation has ceased for 6–12 months in woman > 45 yr
- Climacteric is the period of time between 45–52 yrs during which the female gradual hormonal changes occur which affect all tissues & organs in the body

Menopausal syndrome

1] **Vasomotor instability** ⇨ hot flushes 50–85% Sudden sense of heat & flushing in face, neck, chest d.t. attacks of VD → palpitation & sweating then VC → cold shiver

2] **Cardiovascular** ⇨ CHD, hypertension due to ↑ LDL & ↓ HDL. It is predisposed to in +ve FH, diabetes, obesity

3] **Osteoporosis** ⇨ rheumatic joint pains, backache, dowager hump. Progressive systemic bone resorption occurs with liability to fractures esp ir. cancellous bone especially if cigarette smoker, alcoholic, sedentary life, slim and white

4] **Genitourinary** ⇨ .Discharge (senile endometritis & vaginitis), pruritis
.Dyspareunia (dryness of vagina)
.Frequency, urgency, SUI, recurrent cystitis

5] **GIT symptoms** ⇨ dyspepsia, flatulence, change in appetite

6] **Skin** ⇨ mild hirsutism (upper lip & chin)

7] **Psychological** ⇨ depression, irritability, anxiety, insomnia, ↓ libido

Investigations

- **To confirm menopause**.....FSH > 25–40 mIU/mL
- **For osteoporosis**.....DEXA
- **For CVS**.....HDL, LDL, triglycerides

Management

There is big debate whether to give hormone or non-HRT as recently HRT showed

- **Definite ⇧ in risk** of endometrial cr^{n}, venous thromboembolism^{n}, CVD^{n}
- **Probable ⇧ in risk** of breast cancer (related to length of use)
- **No proven effect on** quality of life, dementia, depression, sleep, libido
- **Non-hormonal drugs** are better used for menopausal symptoms

Hormonal therapy

Indications

1. *Symptoms* of estrogen deficiency (menopausal syndrome)
2. *Asymptomatic* women with high risk for *osteoporosis* or *CHD*
3. *Routine* for all postmenopausal women

Contraindications

- **Absolute:** suspected cr breast, active liver disease, recent myocardial infarction, history of estrogen related DVT
- **Relative:** chronic calcular cholecystitis, controlled HTN or DM

Estrogens Only

- **Oral therapy**
  - *Drugs* ⇨ CEE (Premarin): 0.625–1.25 mg /d
  - *Indicated only* ⇨ if the uterus is removed (∴ no need for 'P')
- **Non-oral**
  - *Drugs* ⇨ as skin patch or gel / vag cream / SC Implant
  - *Indications* ⇨ by-pass GIT & liver ∴ give a > E2 concentration

Combined E & P

- **Cyclic** ⇨ .leads to cyclic withdrawal bleeding
  .CEE 0.625 mg/day + MPA 10 mg /d for 10–14 days
- **Continuous** ⇨ .It avoids withdrawal bleeding
  .CEE 0.625 mg + MPA 2.5 mg daily

Non-hormonal therapy

SERM (tamoxifen)

- Exert estrogenic effects on desired tissues (CVS & bones)
- Avoids estrogen stimulation on others (uterus, breast)

Tibolone

- Livial 2.5 mg (*weak estrogenic, progestogenic, androgenic*)
- Good relieve of menopausal symptoms

For hot flushes

- *Agreal, bromocriptine* (dopamine agonists)
- *Clonidine patch* (twice weekly), α methyl-dopa

For osteoporosis

- *Bisphosphonates* ⇨ the most potent: 10 mg /day or 70 mg once /wk
- *Clacitonin* (salmon) ⇨ intranasal spray 200 IU (miacalcic)
- *Fluoride* ⇨ the only known OSTEO-BLASTIC drug

⑧ Child hood vulvovaginitis

Definition

- Inflammation of vulva & vagina prepubertal due to
- thin vaginal mucosa (d.t. ↓ estrogen → ↓ vaginal acidity)

Mode of infection

❶ *Primary*

* Congenital → cong. fistula, ectopic anus……parasites (oxyuris, amoebiasis)
* Inflammatory → transmission from adult …STD (Ğ, TV, monilia)
* Traumatic → accidental FB in vagina ……non-specific (staph, str., E.coli)
* Neoplastic → sarcoma botryoids

❷ *Secondary*

* Chemical irritation → diaper rash, soaps
* Poor hygiene → wiping perineum from anus to vagina

Clinical picture

Symptoms

- Pain (soreness) &: Pruritis vulvae
- Dysuria
- Discharge:-

▪ Bacterial vaginosis ⇨ excessive, greyish, fishy odor

▪ Candidiasis ⇨ discharge is ODORLESS, whitish, thick, curdy-cheese like adherent white patches → removal leaves slight bleeding

▪ Trichomonas vaginalis ⇨
discharge is MALODOROUS, greenish yellow, frothy, profuse
may be punctate haemorrhages (STRAWBERRY vagina)

Signs

- Red, hot, swollen, edematous, tender
  ± Inguinal lymphadenitis ± scratch ulcer
- Note presence of lacerations (trauma)
  ± peri-anal erythema (parasites)

Investigations

- Bacterial vaginosis
  - Characteristic vaginal discharge
  - Vaginal pH > 4.5
  - Clue cell (granular appearance of vaginal epithelial cells)
  - Whiff test (add 10% KOH → fishy odor)

- Candida
  - PH → acidic
  - Smear → Gram +ve. yeast like, no pus cells
  - Fresh drop of discharge + 10% KOH → hyphae / mycelia
  - Culture on Sabouraud's ¤ or Nickerson medium

- Trichomonas vaginalis
  - Ph → alkaline
  - Smear → Gram -ve
  - Fresh drop examination → motile organism can be described
  - Culture on → Diamond medium, Feinberg medium, Trichocele

Treatment

.GENERAL INSTRUCTIONS → antihistaminics, antipruritics, local hygiene

.TREATMENT OF THE CAUSE → any discharge → smear, gram stain
antibiotic is given according to C&S

- Bacterial vaginosis
  - Flagyl = Metronidazole (250 mg 1x3x7)
  - Clindamycin (300 mg 1x2x7)

- Candida
  - Ketoconazole (Nizoral) 200 mg 2x1x5
  - Fluconazol (Diflucan) 150 mg once
  - Itraconazole (Sporanox) 1gm once

- Trichomonas vaginalis
  - Metronidazole (500 mg) 1x2x7 → metallic taste
  - Tenidazole (2 gm once) 4 tablets
  - Ornidazole (1.5 gm once) 3 tablets

.IN RESISTANT CASES → may give 'E' locally to increase resistance

.IF PERSISTENT/SEROSANGINOUS DISCHARGE → inspect for F.B. / tumors:
➥ P/R, X-ray, U/S, vaginoscope (or cystoscope)

Leucorrhea is

. Clear mucoid (non-infective) vaginal discharge d.t. excess of normal secretions. *Sometimes* it is used to describe **any** *abnormal* discharge from vagina except *blood*.

. Normal vaginal discharge ⇘

	SOURCE
VULVA	Bartholin gland ± Skene's glands
VAGINA	Serous transudate + Bartholin + cx mucus
CERVIX	Endocervical glands (↑ed by 'E' → CYCLIC)
UTERUS	Endometrial glands (esp secretory phase)
TUBES	Goblet glands

Normal defensive mechanism

Vagina → . Closed mechanically by the 2 labia (opposed)
. Lined by thick stratified squamous epithelium
. *Acidic* medium → hostile for organisms

Cervix → closed mechanically by a mucous plug

Uterus → monthly shedding of superficial layer of endometrium

Tubes → movement of cilia towards uterine cavity

Etiology

Traumatic → FB, pessary
Infection →TV, monilia
Neoplasm → infected polyps
Miscellaneous → Fistula, ROM

Different characters of discharge

- *Whitish* → monilia
- *Yellowish (greenish)* → T.V., bacterial vaginosis
- *Serous (watery)* → ROM, urinary fistula
- *Muco-purulent* → bartholinitis
- *Purulent* → endometritis, pyometra
- *Sanguineous* → Cancer (vagina, cervix, body)
- *Offensive* → retained F.B.

Assessment of a case of vaginal discharge

HISTORY

- **Age**
  - . Children → prepubertal vulvovaginitis
  - . Adult → moniliasis, trichomonas
  - . Postmenopausal → senile vulvo-vaginitis & cancer
- **Marital status** → more liable to
  - . Sexually transmitted diseases
  - . Postpartum infection
- **Menstrual history** → congestive dysmenorrhea (pelvic congestion)
- **Obstetric** → suggestive of cervicitis
- **Present history**
  - . Duration, amount, character, odor, color
  - . Relation to menstruation (trichomonas after, thrush before)
- **Associated symptoms** → Pruritis, backache, dyspareunia

EXAMINATION

- Inspection of vulva → vulvitis, bartholinitis, presence of discharge
- Speculum examination for collection of discharge for
  - . Ph
  - . Fresh drop examination, stained film, C&S
- The urethra is milked → any discharge is sent for C&S
- Bimanual examination to detect any pathology

INVESTIGATIONS

- **Smear**
  - .Fresh drop & stained film for trichomonas, gardeneralla, candida
  - .C&S for vaginal, cervical, urethral discharge
  - .Vaginal cytology
- **Immunological tets**
  - .Complement fixation test for gonorrhea
  - .Immuno-fluorescent test for chlamydia
- **Others**
  - .Biopsy from suspected lesions
  - .Stool for oxyuria, bilharziasis
  - .X-ray for foreign body in children

Treatment of specific organisms

* *Gonorrhea* → procaine penicillin 4.8 million units IM once (2.4 in each buttock)
* *Bacterial vaginosis*
  - Flagyl = Metronidazole (250 mg 1x3x7) or local gel (0.75% 1x2x5)
  - Clindamycin (300 mg 1x2x7) or local cream 2% (1x7)
* *Chlamydia*
  - Azythromycin 1 gram (single dose)
  - Doxycycline (100 mg 1x2x14)
  - Clindamycin (300 mg 1x3x14)
* *Candida*
  - Local
    . Mycostatin (Nystatin)
    . Clotrimazole (Canestan)
    . Miconazole (Daktarin)
  - Oral (in virgins, resistance)
    . Ketoconazole (Nizoral) 200 mg 2x1x5
    . Fluconazol (Diflucan) 150 mg once
    . Itraconazole (Sporanox) 1gm once
* *Trichomonas*
  - Metronidazole vaginal tab. (500 mg) 1x1x10
  - Metronidazole oral tab. (500 mg) 1x2x7
  - Tenidazole (2 gm once) 4 tablets
  - Ornidazole (1.5 gm once) 3 tablets

Treatment of specific genital organ infection

* *Vulvo-vaginitis*
  - Good local hygiene
  - Anti-pruritic
  - TTT of the specific organism acc to C&S
* *Cervicitis*
  - Medical ttt specific antibiotics, if failed
  - Cervical cauterization, if failed
  - Conization or even hysterectomy in chronic cervicitis
* *PID*
  - Combination antibiotic till fever subsides
  - Surgical intervention if
    . Severe disease refractory to medical ttt
    . Ruptured / huge tubo-ovarian abscess
    . Generalized peritonitis

⑤ Pelvic inflammatory disease

DEFINITION

Infection & inflammation of upper genital tract i.e.
Tubes, *ovaries*, *pelvic peritoneum* (± uterus) ⇨ 2-3% of population

ETIOLOGY

Organisms
- STD's esp gonococcus (40%), chlamydia (60%)
- Non-specific organisms (aerobic or anaerobic) :usually mixed

PDF
- Sexually active females with multiple sexual partners
- IUCD users (Barriers + COC → ↓ PID)

Routes of infection
- *Ascending* via lumen (endosalpingitis) or lymphatics (interstitial salping.)
- *Direct* from neighboring organs as appendicitis ⇨ perisalpingitis
- *Blood* spread as T.B.

❶ Acute PID

Clinical picture

1. **Symptoms**
   - General → FAHM-R
   - Abdominal → acute lower abdominal pain
   - Pelvic → congestive symptoms (pain, bleeding, discharge)
2. **Signs**
   - General → signs of infection
   - Abdominal → . tenderness & rigidity in lower abdomen (peritonitis)
   - P/V → tender movement of cx, tender adenexae ± tender mass

Investigations

C.ulture → swab from endocervix, rectum, pharynx
B.lood → ↑ ESR, TLC, CRP
C.omplications
- **Ultrasound** → adnexal swelling
- **Laparoscopy** → if diagnosis is uncertain

Criteria for diagnosis

All the *Major*	+ one *Minor*
- Lower abd. pain ±T ± RT	- Temp > 38°c, ↑ ESR, TLC > 10.500
- Adenexal tenderness	- Inflammatory mass (by P/V or U/S)
- Cx motion tenderness	- Org. ±pus (lap., culdocentesis, endocx swab)

D.Diagnosis ⇨ .....causes of acute abdomen.....

- Disturbed ectopic. acute appendicitis
- Ruptured ovarian cyst, complicated fibroid

Complications

- Recurrence.....Chronicity..... esp. CHLAMYDIA
- Infertility.....Ectopic pregnancy
- Spread →.....Peritonitis, Septicemia

Treatment

› Indications for hospitalization

- Nulliparity or low parity → to avoid infertility
- Bad general condition
  . Large mass (tubo-ovarian complex felt on P/V)
  . Complicated mass (ruptured tubo-ovarian mass)

› Antibiotic therapy (continued 48 hrs after resolution of fever)

- Regimen I.....cefoxitin (2^{nd}) or cefotaxime (3^{rd}) + Doxycycline
- Regimen II.....clindamycin + gentamycin
- Regimen III.....ampicillin + gentamycin + metronidazole

NB.... **TTT of specific organisms (uncomplicated)**

GONORRHEA single dose of *ceftriaxone* 250 mg (IM) or *cefixime* 400 mg, *ciprofloxacin* 500 mg (oral)

CHLAMYDIA (a usual association) → azythromycin 1gm

› Surgical intervention if

❶ *severe disease refractory to medical ttt or*
❷ *ruptured / huge tuboovarian abscess or*
❸ *generalized peritonitis*

↘ *Laparotomy* ✓✓ + *drainage* + *peritoneal toilet*
± ..... unilateral adenexectomy (to preserve fertility)
OR .....pelvic clearance = TAH +BSO (for older age)

❷ Chronic PID

Etiology

. STD's.....non-specific....chronic granulomatous (ŤB, B)
. Either

* Persistence of acute PID (due to:)
  - Glands are racemose → difficult drainage
  - The glands are very deep & surrounded by fibrosis
* Chronic from the start

Pathology

- **Hydrosalpinx** (retention of serous fluid). **Tuboovarian cyst** is hydrosalpinx communicating with ovarian cyst
- **Pyosalpinx** (retention of pus). **Tuboovarian abscess is** pyosalpinx communicating with ovarian abscess
- **Perisalpingitis:** thickened, kinked tube surrounded by adhesions
- **Salpingitis isthmica nodosa** (chronic interstitial salpingitis)
- **Fitz-Hugh-Curtis syndrome** (adhesions causing peri-hepatitis)

Clinical picture

History → previous attacks of acute PID or ectopic

Symptoms

- Infertility
- Congestive symptoms (menorrhagia, pain, MP discharge)

Signs

- General → ill health....TB toxemia
- Pelvic → . Tenderness (lower abdominal, cervical motion)
  . Tubo-ovarian (adenexal) mass
  . Fixed RVF

Differential diagnosis .....endometriosis, cancer ovary, TB

Investigations

Culture → swab from endocervix, rectum, pharynx

Blood → ESR, TLC, CRP may be normal

Complications

- **Ultrasound**..... if pain prevents PV & to follow up TO abscess size
- **Laparoscopy**....if diagnosis is uncertain or no improvement within 48-72 hr

Treatment

Prophylactic → prevent puerperal, postabortive & surgical infection

Active

- *PID with no masses* → medical ttt for 48 hours initially
  . Rest, fluids, Fowler position
  . Antibiotics, hot fomentation

- *If good response* (improvement of general health) → continue

- *If no response* or *there is a mass (abscess) from the start* → surgery
  . Unilateral adnexectomy (if young → conservative)
  . TAH + BSO (esp if bilateral & > 40 years)
  . If infertility → tuboplasty fails ∴ remove + ART (better)

- *In chronic specific* → treat cause as B or TB

Case 1

A PO+1 young female presented at reception room with a diffuse, but severe abdominal pain for which she had antispasmodic over the past one week.

Her menstruation is irregular over the pat 15 days. She also has a history of vaginal spotting after intercourse for the past year

On examination P 110 b/m, BPr 100/60 T. 37.2, abdominal examination showed diffuse tenderness, but max over the right iliac fossa. P/V revealed tender movement of cervix which looked unhealthy on speculum examination

- **What are the 2 possibilities for such story**
- **What is the key for diagnosis**

Case 2

A 25 year old, gravida 2 para 1 whose LMP was 4 wks ago, presented to the emergency room with a complaint of lower abdominal pain which began in the right lower quadrant 4 days ago and now is localized in the lower abdomen.

Her temp is 37.9, BPr 120/80, pulse 92 b/m. physical examination demonstrates bilateral lower abdominal pain with adnexal tenderness which is exacerbated with movement of the cervix

An IUCD string is noted protruding from the cervix with a yellow white discharge. She has no nausea, vomiting or dizziness

- **What is your provisional diagnosis, how to confirm it**
- **What are the precautions taken to insert an IUCD to avoid such condition**
- **What would be the correct treatment in this case**
- **If large adnexal masses are found, would this change your management?**

Case 3

A 32 year old diabetic lady complains of vulval fishy odor and a vaginal discharge. Speculum examination revealed whitish adherent patches with a strawberry erythematous cervix. Her husband also complains of dysuria and milky whitish discharge at termination of micturition.

- **Discuss possible causes of this discharge & how to manage them**

Case 4

A 24 year old woman GO married for 5 months presents with a non-tender cystic mass in her right vulva that cause some discomfort during walking and coitus. The mass is at the posterior part of the labium majus and is about 2x2 cm

◗ **What is the diagnosis** ◗ **What is the best management**

Case 5

A 34 year old married lady para 1+1 was referred from the venereal clinic due to acute exacerbation of chronic lower abdominal pain. She gave history of right salpingectomy due to previous ectopic; also appendectomy was done when she was 14 years old.

Two days she gave history of increasing pain in the left iliac fossa. Her LMP was delayed for 5 days. Previous cycles were irregular. She had noticed a brown vaginal discharge for 48 hours and she had passed either a clot of blood or some tissues.

General examination showed BPr 110/70, pulse 90, Temp 37.7. Pelvic examination showed normal uterine size with some tenderness on the left side, also a tender left adnexal mass was found.

◗ **Discuss the features with or against:**

- A further ectopic
- An inevitable abort on
- Acute PID
- A complicated ovarian cyst

◗ **State 2 main fundamental investigations for differentiation**

◗ **Discuss your management should she have**

- A further ectopic pregnancy
- A 5 cm diameter hydrosalpinx
- A 10 cm diameter ovarian cyst

Case 6

A 16 yr old-girl presents with lower abdominal pain which developed suddenly a day ago. The pain is over the whole abdomen but more worse on the right. It was intermittent at 1st but now is constant and more severe. She states that her bowels are opened normally the day before and she had only one attack of vomiting this morning. Her LMP is 2 days late but she states to have slight irregular cycles. On examination: temp 37.9, pulse 112 bpm, BPr 116/74. Abdomen is distended symmetrically with generalized tenderness, max on the right iliac fossa with rebound and guarding.

◗ **Discuss further management to reach a final diagnosis**

Infections MCQ

1- This discharge is associated with all, except:

a- Acidic ph
b- COC
c- Severe soreness in the vulva
d- Good response to metronidazole
e- Bleeding spots after scrapping

2- Which is not associating such organism (arrow)

a- Vulval itching
b- Redness of the vulva
c- Odorless discharge
d- Strawberry vaginal walls
e- Dyspareunia

3- This discharge is associated with, except

a- Typically occurs postmenstrual
b- May be associated with malodor
c- Vagina is strawberry
d- Cultured on Sabaroud's medium
e- Its organism may be seen in normal females

4- Which is the incorrect statement for that organism (star)

a- It may be discovered in the vaginal fluid of asymptomatic women
b- It flourish with increased vaginal acidity
c- Usually associated with malodorous discharge
d- May be associated with dysuria
e- Vaginal discharge is typically frothy

5- As regard this infection, all are true except

a- Is the main cause of vulvovaginitis
b- Is characterized by alkaline ph
c- Diagnosed by 'clue' cells
d- Increases with bleeding
e- Increases with amenorrhea

6- The arrow shows a condition associated with

a- Normal vagina
b- Pruritus & dyspareunia in most cases
c- Responds well to miconazole
d- Alkaline vaginal ph
e- Odorless discharge

7- This gross pathology (arrow) seen by colposcopy is associated with, except

a- Leucorrhea & backache
b- Infertility
c- Ectopic pregnancy
d- Chlamydia
e- HPV 6,11

8- All the following about this slide is true, except

a- Tubes are better removed in infertile patients
b- IUCD must be removed before treatment
c- Suspected more with chlamydial infection
d- Leads to habitual abortion
e- Leads to ectopic pregnancy

9- A 29 yr old patient complaining of 2ry infertility for 4 years. Diagnostic laparoscopy was done with injection of methylene blue. This result indicates which of the following

a- Para-ovarian cyst
b- Healthy tube
c- Leakage of the dye
d- Fimbrial spillage of the dye
e- Fimbrial block

10- That patient noticed mild lower abdominal pain, vaginal discharge & deep dyspareunia. LMP was 2 wks previously. The uterus is anteverted normal size& the RT adenexa was tender. Treatment consists of:

a- Removal of the IUD & insertion of new one.
b- Antibiotics & keep IUD in place.
c- Removal of the IUD & broad spectrum antibiotics.
d- Reassurance.
e- Transvaginal U/S.

11- As regards Herpes simplex, all Tru-Exc::

a- Type1 can invade the genital tract.
b- In 1ry forms, the leading complaint is agonizing pain.
c- The recurrent attacks tend to be less severe than the primary attack.
d- Severe dysuria with even retention of urine may occur in 1ry forms.
e- Suppression with acyclovir doesn't decrease the number of recurrent attacks.

12- The correct statement for human papilloma virus:

a- It is rare type of STD.
b- It is classified into subtypes according to types of antibodies.
c- Has a questionable role in development of CIN.
d- Koilocytic atypia is the main feature in the cytological study.
e- The most effective therapy is acyclovir.

13- This pathology may be caused by all except

a- Human papilloma virus
b- Chlamydia
c- Gonorrhea
d- Syphilis
e- Tuberculosis

Infection

Write short notes / essay on

- Give DD of vaginal discharge
- Causes of excessive vaginal discharge
- Etiology of leucorrhea
- Management of leuchorrhea
- Pruritis vulvae

- Diagnosis & ttt of gonococcal infection of primary sites
- Bacterial vaginosis (Gardeneralla vaginalis). Mention its complications
- Complications & ttt of genital chlamydial infection in female genital tract
- Chlamydial infection in the female genital tract
- Candidal vulvo-vaginitis (moniliasis)
- Diagnosis & ttt of monilial & trichomonal vaginitis
- Fungal vulvo-vaginitis
- Trichomonas vaginitis

- Itchy vaginal discharge in a woman in the childbearing period (diagnosis & ttt)
- Vulvovaginitis in children
- Microbial vulvovaginitis during childbearing period
- Bartholinits
- Cervical erosions

- Diagnosis & ttt of PID
- Diagnosis & ttt of acute PID
- Etiology of acute salpingitis
- Diagnosis & ttt of chronic PID
- Pathological types of chronic salpingitis
- Diagnostic features of female genital tuberculosis

Enumerate

- Causes of vaginal discharge
- Causative organisms of the acute PID
- Regimens of antibiotic administration for cases of acute PID

Puberty

Write short notes / essay on

- Development of 2ry sexual ccc at puberty
- Types & ttt of precocious puberty
- Enumerate causes of disordered puberty

Menopause

Write short notes / essay on

- Management of normal menopause
- Osteoporosis (definition / diagnosis / ttt)

Physiology

Write short notes / essay on

- Estrogen use in gynecology
- Prolactin
- Gonadotropin releasing hormone

Enumerate

- Causes of anovulation
- Causes of hyperprolactinemia
- Predisposing conditions for luteal phase defect

Anatomy

Write short notes / essay on

- Lymph drainage of .....Vulva / Cervix
- Anatomy of .....Bartholin / Vagina / Levator ani / Pelvic floor

Enumerate

- Masses in Douglas pouch; define what is the Douglas pouch?
- The anatomical structures between the 2 layers of broad ligament
- Complications of female genital mutilation

Embryology

Write short notes / essay on

- Development / embryology of the ovary
- Septate uterus
- Imperforate hymen / Clinical presentation of imperforate hymen

Gyna	1 (very good)	2 (excellent)	Enumerate
"A"			
Anatomy	Female genital mutilation	- Pelvic blood supply - Ureteric injury sites	- Lymph nodes of pelvis - Comp. & types of circum. * Structures in broad lig.
Embryology	- Imperforate hymen	Uterine malf.	
Physiology	- GnRH	Est., Prog. Menst cycle	* Uses/funct. of Horm / anti
Pub., menop.	Management of menop. (HRT) Precocious puberty	Menopause	* causes of P.puberty
Amenorrhea	- Anovulation - PCO, hyperprolact, LPD	Amenorrhea Types / Assessment	- Pdf for LPD - Etiology of 1ry / 2ry amen.
Bleeding	Postmenopausal bleeding DUB (metropathia hgica)	Bleeding Classification & etiology	
Pain	- Dysmenorrhea - PMT		* Causes of chronic pelvic pa * Causes of dyspareunia
Infertility	Assessment of ovary / tube/ ut. Induction of ovulation	- OHSS, unexplained infertility - IVF	- Causes of cx factor * Causes of male infertility
Infection	- PID (acute / chronic) - Vulvovaginitis (children/adults)	. Chlamydia / Gonorrhea . Gard.vaginalis . Candida / T.vag	- pathological forms of PID - Pdf for PID
Contraception	- Natural (phys) contraception - Contraception for lactation - Complications of IUCD - Comp of hormones - Long acting hormonal contr.	Emergency contrac.	- Contraindications of IUD - Comp of IUD - Comp of COC
"B"			
Tumors	- Uterus . Complications of fibroid . Endometrial hyperplasia . Pelvic endometriosis - Cervix . CIN . Pap smear - Ovary . Complications of ovarian cyst . Dermoid cyst of the ovary . Diagnosis & manag. of cr. ov.	- Choriocarcinoma ☑ - Operative . Comp. of D&C . Comp / indication of:- Hysterectomy Laparoscopy HSG	- Diagnosis of CIN * causes of contact bleed * causes of barrel shaped cx * causes of uterine swelling * causes of adnexal masses * causes of DP masses * Types of ovarian swellings * causes of vulvar itching * causes of vulvar ulcers * causes of vulvar swellings
Prolapse	Vesico-vaginal fistula	Prolapse ± SUI (mostly clinical	- Types of prolapse / incont.
Operative	HSG.....laparoscopy.....indications & complications of D&C / hysterectomy		